

MEKELLE UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF MANAGEMENT



**CONTRIBUTION OF COMMUNITY BASED DEVELOPMENT FOR LOCAL
ECONOMIC DEVELOPMENT: INFRASTRUCTURE**

(A CASE STUDY OF YEKA SUB-CITY)

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**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
THE AWARD OF MASTER OF ARTS DEGREE IN DEVELOPMENT STUDIES
(REGIONAL AND LOCAL DEVELOPMENT)**

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DECLARATION

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This thesis is submitted for the Master of Arts (MA.) in Local and Regional Development in the Department of Management, CBE, under the direct supervision and guidance of principal advisor **Ato Abadi Afera (Assistant Professor)** and **Ato Kibrom Aregawi (Co-Advisor)**, CBE, MU, Mekelle. The manuscript of this thesis has been thoroughly scrutinized by them. I also assert that this thesis has not been submitted earlier for the award of any other degree or diploma anywhere else.

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This thesis does not contain any conjoint research work with us or with anyone else. The final copy of the thesis which is being submitted to the university office has been carefully read for its material and language and she has completed her research work to our entire satisfaction.

To the best of our knowledge, the entire thesis comprises the candidate’s own piece of original research work. Thus, the thesis is worthy of consideration for the award of MA. Degree in Development Studies in specialization of Local and Regional Development.

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ABSTRACT

Ethiopian cities are the fastest growing administrative units in the country adding 4.2 percent per year. Addressing Ethiopia's infrastructure deficit will need a sustained annual expenditure of \$5.1 billion over the next decade. Since this huge amount of money can't be fulfilled by the government alone, the gap can be addressed by raising additional financing or adopting lower cost technologies developed by the community. In similar lines, the main objective of the study was to assess the contributions of community based infrastructural development (CBID) to local economic development (LED) in Yeka sub city accompanied with the specific objectives of determining the contribution of the project with regard to community level of local knowledge, examining project ownership and continuity, infrastructure needed that enhances local economic development, and challenges of CBID for LED. In addition, impact was assessed with strong CBIDs and with those less CBIDs using the variables level of income, peace and security, access to water, level of employment and level of economic development. Methodologically, the study used a survey method involving 345 sample residents which was taken from the purposely selected districts of Meserak Luke, Hayat Tafo and Fanuel of Woreda 13. Cross-sectional data was used since data was collected at one point of a time. Data analysis was done using descriptive statistics and a multiple regression methods. The findings revealed that the CBID are constructed based on the interest of community and most of them has participated in raising resources. Meetings and social associations have also contribution in promotion of CBID. In addition CBID were contributing to LED in creating employment, income generating and better access of the services of the CBID projects. Besides the above advantages, community mentioned that emphasis must be given to public toilet, green development, cobble stone and police station. However, some critical challenges like lack of start-up and follow-up support, lack of project quality, undedicated committees and un-coordination of other government office are challenging the projects. Likewise, the regression results show that in strong communities' infrastructures like safe drinking water and level of peace and security has progressed. However, strong CBID is observed to have relatively negative effect on house rent (measure of house value), level of economic activity and employment benefit. The benefit of the CBID in those dimensions (house rent, economic development and employment) has increased in the less CBID community.

Key words: CBD, LED, infrastructure, participation

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ABBREVIATIONS

AICD	African Infrastructure Country Diagnostic
CBA	Community Based Approach
CBD	Community Based Development
CBID	Community Based Infrastructure Development
CBO	Community Based Organization
CBOPWP	Community Based Ownership and Participation Work Plan
CDD	Community Demand Driven
CDE	Community Development Exchange
CDF	Community Development Foundation
DBADB	Design and Building Administration Development Bureau
FAO	Food and Agriculture Organization
GREPB	Gender & Rural Employment Policy Brief
GTZ	German Technical Cooperatives
IFC	International Finance Corporation
ILO	International Labor Organization
LED	Local Economic Development
MDG	Millennium Development Goal
NGO	Non-Government Organization
PBS	Protection of Basic Services
RPG	Research & Planning Group

SME	Small and Medium Enterprise
SPL	School of Public Leadership
TVET	Technical and Vocational Education Training
TWC	Together We Can
UN	United Nations
UNDP	United Nation Developmental Program
YSCA	Yeka Sub City Administration

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CHAPTER ONE: INTRODUCTION

This chapter deals with introduction part of the thesis that involves background of the study, statement of the problem, research question, objectives of the study (general and specific objectives), significance of the study, scope and clear delineation of the paper and its organization.

1.1 Background of the Study

The concept “community” is defined in many ways by different authors. Ferrinho (1980) defined it as a specific system that arises when human population settle in a given area, have shared common characteristics and interests and build common relationships for common benefits. For De Beer et.al (1998), a community is a specific physical locality with shared interests and needs of its members. A common line, running through these definitions, and considered essential to the above definition of community is that, in each case there is an alliance of people who reside in a specific district with a full range of daily felt needs. In this case, a community is a socially, culturally and ecologically bounded group of people who have potential and hold the right to make decision in any kind of development activity for the mutual advantage of its memberships.

In terms of community based development, it includes a much broader range of projects. These projects can include everything from simple information sharing to social, economic and political empowerment of community groups. It is noted that through times, communities been engaged in activities designed to expand the well- being of their members and have been taking the creativity and responsibility for such activities further by using knowledge, social capital and resources of resident in the community, that recognizes and exploits on local opportunities to stimulate economic growth and employment (De Beer and Swanepoel, 2001).

Community based infrastructural development investment enables improved provision and maintenance rates of basic infrastructure such as access roads, water supplies, markets and health facilities to the community at large to have better quality life standards assets and services that are essential for socio-economic development. This investment motivates local entrepreneurship, local economic development, and a large community involvement with important income distribution effects (ILO-Geneva, 1996).

According to Blakely (1994), LED refers to a process by which local government and/ or community-based groups manage their existing resources and enter into new partnership arrangements with private sector, or with each other, to create new occupations and stimulate economic activity in a well-defined economic zone. Thus, in order to have a better opportunity of employment created as a result of CBD; it needs a partnership among and between government, private sectors, community and community organization (Miehlradt and McVay 2006).

In the past decades, Ethiopia has used a community based integrated approach consisting of four major parts which inter linked with one another. These are physical upgrading, income-generating activities, building the social awareness and participation of the community and preventive health programs (Redd, 1988).

A CBD activity in Ethiopia works from the basic interests and questions of community itself. There are five major tasks concerning to infrastructure development under “Community Development Agency” known as economic, social, green, paved stone and other developmental activities that have many sub-projects under. This uses community’s knowledge, material, money and labor force as an input which helps them as participator and user of the developmental benefits. Government supports to those projects that advantage all citizens and have a community usage without payment.

Community development activities works in decentralization form that help to enhance transparency and accountability within and between the Woreda administration and committee’s (DBADB, 2013). To achieve a fast and sustainable development, centering woreda and focusing districts, government is doing a much effort in community participation and ownership of development actions in creating awareness to help low developmental areas to have a better level of infrastructural services. So, this plan works through the allocation fund of 35% government and 65% from community. As a result it helps community to reduce dependency and upturns self-support and feelings of ownership (ibid).

Therefore, this paper focused on the contribution of CBD efforts and it explores the contribution of infrastructures to local economic development by taking Woreda 13 of Yeka sub-city; because of their highest rank in the overall community based infrastructural works in assessing the three Tibias’ namely; Meserak Luke, Hayat Tafo and Fanuel.

1.2 Statement of the Problem

As CBD has defined above, it has a number of broad aims; one is to give community basic services (Blakely, 1994) that stimulate LED through available resources to create jobs and motivate the economy of a well-defined territory.

CBD has always had a diverse set of objectives, solving local problems (e.g., unemployment and poverty); addressing inequalities of wealth and power, promoting democracy, building a sense of community and giving service provision are among the objectives (Rubin et.al, 1992). Moreover, this methods focus on ways of growing the quality of life by establishing new institutions, improving infrastructure, or building on existing resources in the community. Communities need to provide a good infrastructure, including housing and schools, in order to generate jobs, income to contribute to local economic developments. That is why many practitioners consider community development as a set of activities that must precede economic development.

Ethiopian cities are the fastest growing administrative units in the country, adding 4.2 percent per year. And infrastructure contributed 0.6 percentage points to Ethiopia's annual per capita GDP growth over the last decade. Addressing Ethiopia's infrastructure deficit will need a sustained annual expenditure of \$5.1 billion over the next decade (AICD, 2010).

This level of investment is well beyond what the country can afford, however, in many situations limited government in providing basic infrastructure and ensuring primary social services has led to the search for alternative options. The funding gap can be addressed by raising additional financing or adopting lower cost technologies developed by the community.

CBD helps the community in differentiating its own problem, decision making and overall planning. But it is questionable when coming to disadvantaged and marginalized communities. Poor access raises level of hardship on the community and it is a barrier for sustainable development. Problem of organization among the community, financial capability, awareness and small participation and lack of the local official to control the activities made by the community is the core problem facing in investing for local infrastructure (IFC, 2000).

Additionally, reorientation of bureaucracies to support community empowerment and investment in social capital through user participation in decision-making including rule formulation; and

achieving a match between what people in a community want and are willing to pay for and manage, and what agencies supply are among problems in CBID (Deepa, 1995).

Therefore, assessing their current contribution is very important for future interventions and actions to be made to improve the quality and sustainability of community based infrastructural development. The main focus is on finding out the contribution of CBD mainly focusing on infrastructure to local economic development.

1.3 Research Questions

The specific research questions that the study seeks to answer are the following;

1. Which types of infrastructures are currently constructed with the interest of the community?
2. How this infrastructure has an effect on LED?
3. How does community participation in resource mobilization can help in expanding infrastructure?
4. What are the measures that should be taken to increase the contribution of the community based infrastructural development for LED?

1.4 Objective of the Study

1.4.1 General Objective

The study's major objective is to provide a comprehensive picture on the role of community based development in Yeka sub-city and their potential on the contribution to local economic development with a special emphasis on infrastructures.

1.4.2 Specific Objectives

The specific objectives of the study are:

1. To explore how the level of local knowledge has an effect on the desired infrastructure in the area.
2. To make an impact assessment with those strong CBIDs and less CBIDs.
3. To examine community ownership and projects continuity.

4. To assess the kind of infrastructure needed to enhance local economic development.
5. To identify major challenges of CBID towards their contributions for LED.

1.5 Significance of the Study

The study analyzes the role of community based infrastructural development for local economic development. It also provides existing challenges, opportunities and forward solutions to some of the problems observed. Therefore, it will give light on required efforts to enhance the community based for infrastructure development at larger scale to identify the key problems that the city administration and community has been facing to bring about local economic development in the area. The information generated will also help a number of public organizations, research and development organizations, the city administrators, public service providers to assess their activities and redesign their mode of operations and ultimately influence the design and implementation of policies and strategies in the sub-city.

1.6 The Scope and Limitation of the Study

The study focused on the assessing the contribution of community based infrastructures for local economic development in Addis Ababa; Yeka sub-city. The study covered only the purposely selected Woreda, i.e. Woreda 13 and the three districts ‘Tabia’ namely Meserak Luke, Fanuel and Hayat Tafo.

The assessment also covered only the roles played by the community and the variables used in assessing the contribution of CBIDs as a result for the local economic development. It didn’t include external agents like donors, NGO’s, and infrastructures made by governments and so on. The findings from the assessment again may not possibly represent other community based development efforts rather than infrastructure provided in “Community Development Agency” known as economic, social, green, paved stone and other developmental activities that have many sub-projects concerning to types of infrastructure under. Therefore, the findings from the assessment are limited to the study area and the conclusions delineated may not possibly represent other community based infrastructural contributions to the local economic development.

1.7 Organization of the Paper

The paper is organized into five chapters. After introducing in chapter one chapter two reviewed literatures on with regard to the study and the third chapter presented the methodology. Furthermore, in chapter four the study discussed data presentation and analysis. Finally, the last chapter of the study concluded the study and incorporated recommendations.

CHAPTER TWO: LITERATURE REVIEW

This chapter reviewed literatures about the nature, concepts, functions and roles of community based infrastructure development for local economic development. In addition theories and approaches of community based development infrastructure and LED in the literature are assed.

2.1 Theoretical Nature of Community Based Development

First question that comes in mind when it comes to community-based development is the definition. Simply, it is a form of development that takes place inside the community, emphasizes maximum participation of community members in its design and implementation, is ongoing, meets real needs, and is basically self-reliant. To achieve this, the community requests to have a structure, and persons trained in appropriate methods of implementation. Usually, community-based development will be small-scale, low-cost, and use simple technologies. The model must be equally available to entire communities, irrespective of their location, denomination or means, and provide for all members of the community according to their needs (Ghazala & Vijayendra, 2003).

Community based development is a very complex activity that there are so many elements involved and it seems almost hard to describe development in a clear and organized way. Although it is indeed a very complex field, there is a method which can be used to differentiate many of the mechanisms and processes involved in this work namely System Theory (Andy, 2000).

General System Theory which was developed by Ludwig von Bertalanffy et.al (1968) provides an analytical framework which can be used to describe some of factors involved in community development. The key concerns in community development such as assessing influence and power, understanding the dynamics of inter-group connections, and seeing the changes involved in planning development activities can be understood and described using System Theory.

Most CBD usually works in involving the following steps: (Andy, 2000)

- Assessing community;
- Choosing development goals;
- Planning a strategy to grasp those goals;

- Carrying activities to achieve goals and;
- Evaluating improvement and including the results of evaluation in subsequent activities.

The use of these System Theory ideas can help for workers to organize information and see the patterns in complicated community processes as they plan and carry out development activities through their communities.

For CBD to occur people must adopt a new attitude, in which they become actors rather than recipients, and embrace small incremental change generated internally rather than expect large infusions of external means.

As a theory, community relations is generally defined as being based on three key principles which are intimately linked with each other and these are, diversity, equity and interdependence. Community relations work therefore involves promoting recognition, respect and tolerance for the variety of different communities for achieving a common goal and ensuring equality of opportunity and equality of decision-making, access to resources, services and developing a unified society in which different interest or identity groupings recognize their duties and commitments to one another (Helen, 2006).

The practice of organizing communities has been in a state of evolution for over than 75 years. Community organization has at times been treated as a "singular model of practice", several typologies of community organization have been developed on the premise that this phenomenon comprises various alternative change models (Minkler & Wallerstein, 1998). Community development showed the three concepts of basic initiative: social action, locality development, and empowerment. According to Bracht et al. (1999) community program directions must be designed and managed by skills and resources within the community to maintain continued effort and it also sets principles that contain felt need, extensive citizen involvement, consensus, and local decision making. In a modern community development, it serves as the linkage of community organization, which stresses local action and use of local resources with economic development which emphasizes national planning, proper allocation of resources, and systematic movement toward well-defined goals. It is important for the community to apply self-support technique development efforts, since the government can't fulfill the gap of every public needs.

The significance of public capital for growth stems from its result on the invention and location decisions of private industry. Following Meade's (1952) classification of public inputs, public capital, such as highways, bridges, sewer systems, and water treatment facilities, can be viewed as inputs in the production process of private industry that contribute independently to output. Here the private contributors are community and local governments that determining levels of infrastructure investment in local areas.

Infrastructure has given a huge emphasis on the international stages to improve the well-being of community. At the UN Millennium Summit of September (2000), 189 nations adopted the 'Millennium Declaration,' and out of which developed a set of eight goals, 18 numerical targets and 48 quantifiable pointers to be achieved over the 25-year period from 1990- 2015. In various ways, infrastructure investments support virtually all the MDGs, including halving poverty in the world by 2015. In addition infrastructure also affects non-income aspects of poverty, contributing to improvements in health, nutrition, education and social cohesion. For instance, roads contribute considerably to lowering transaction costs (MDG I), raising girls' school attendance (MDG II/III), improving access to hospitals and medication (MDG IV/V/VI), and promotion international connectivity (MDG VIII) (Afeikhena, 2011). In general, the World Bank's (1994), study on infrastructure underlined the critical role of infrastructure in the sustainable development process. Not only does the development of infrastructure services contribute to growth, but growth also vice aversely, contributes to infrastructure development, in a virtuous circle.

Ethiopia in recent years, has made significant progress in infrastructure, and its infrastructure indicators compare relatively well with low-income country peers. The country developed Ethiopia Airlines (now one of the three main African airlines) and associated regional air transport centers. It has launched an ambitious investment package to upgrade its network of trunk roads and is establishing a modern funding mechanism for road maintenance. Access to water and sanitation is expanding rapidly from a very low base thanks to judicious concentration on intermediate options such as traditional latrines, wells, boreholes and stand posts (AICD, 2010).

In Ethiopia, the MDGs do not clearly include targets for infrastructure provision aside from those in terms of water and sanitation. However, infrastructure plays an essential role in enabling

progress on all the MDGs. In the Ethiopian case, it has been simulated with micro-data that a set of interventions to provide the poorest quintile with access to electricity and sanitation and bringing everybody within 10 km of the public transport system and within 2 km of clean water source would decrease poverty by at least 11% and increase average consumption by 4.4%. Consequently this has an impact on LED (Vijay.et.al, 2005).

Even though it shows a progress, Ethiopia's infrastructure stock is far below regional averages, and without doubt it is insufficient for the development of joined and well-functioning markets and easy service delivery. Important efforts have already been made to increase connectivity in terms of roads and so on, such efforts will have to be sustained and complemented by increased community partnership. While strengthening relations between them is one of the solutions for the challenges of infrastructure in Ethiopia. Richard Caborn (1997) has stated that,

“The government places great importance on the real participation communities in the whole range of renewal activities. It is significant to the success of renewal programs to involve as many people as possible. This can lead to improved decision-making, enhanced program delivery and improved sustainability”

Therefore, partnerships are perceived as the institutional mechanisms over which community involvement will be mediated and represent the bases for the construction of infrastructures.

2.2 Approaches to Community Based Development

The evolution of CBD theory has not yet generated an equivalent advance in application strategies. The traditional paradigm, with its focus on helping communities regain their past magnificence was associated with business attraction, retention, and expansion strategies (Shaffer et.al, 2004).

But modern paradigms practical methods to implementing are less clear. Part of the matter is that self-help, asset-based, and self-development theories focus as much on process (building community efficacy) as on outcomes. In addition, the outcomes are no longer tangible effects such as jobs and income, but rather unclear concepts like innovation and entrepreneurial activities (ibid).

Governments in many less developed countries lack capacity to jointly plan, budget and implement LED strategies. Such limited capacities create a scenario where local development priorities attract insufficient focus and bring negative effects for local economic development. CBD prospered in scaling up the community led approach to local development in mostly in local area. It contributed to strengthening participatory governance, supported and developed local capacities for CBID, and facilitated a collaborative relationship between communities and local authorities. There are also other benefits like improving transparency, accountability and assuring quality of public services (UNDP, 2013).

2.2.1 Community Driven-Development

Community Driven Development is a term that was coined a few years ago by World Bank. However, there is a much longer history of community based forms of development. In the case of developing countries, the cooperative drive and Gandhian (Gandhi, 1962) ideas of village self-reliance and small-scale development were clearly significant. Gandhi saw the cooperative movement as a solution to what he regarded as harsh effects of modernization and colonial rule.

The basis of CDD initiatives is the active involvement of members of a defined community in at least some aspects of project design and implementation. While participation can occur at many levels, a key objective is the integration of ‘local knowledge’ into the project’s decision making processes. When potential receivers also make key project decisions, participation moves to the level of self-initiated actions what has come to be known as the exercise of ‘voice’ and ‘choice’ or ‘empowerment’ in CDD terminology. Participation is expected to ensure that projects are better designed, benefits better targeted, project inputs delivered in a more cost effective and timely manner, and that project benefits are distributed more fairly and with smaller leaks due to corruption and other rent-seeking activity (Ghazala & Vijayendra, 2003).

Mosse (2001) observes several participatory projects. He identifies four aspects of this: the first one is shaping of knowledge by local relations of power by participatory exercises are often public events and are open-ended regarding ‘target groups’, program activities etc. This makes such events inherently political, and what is reflected is often strongly shaped by local relations of power, authority, and gender. The second he mentioned are, Outsider agendas get expressed as local knowledge project facilitators are not inert. They shape and direct these processes and

locals 'needs' are often shaped by perceptions of what the project can deliver. Third, there is local collusion in the planning exercise. People agree in the process of problem definition and planning because it creates the space within which they can manipulate the program to serve their own interests. This can benefit both the project staff and project beneficiaries, but it clearly suppresses difference and inspires consensus and action over detailed planning. An irony is that staff who are viewed as 'too participatory' can easily be seen as under-performing by both the project and the community. The last one is the idea of participation is used to legitimize the project's own priorities and needs and the needs of donors to include such processes in their projects. Since it has little real support from either the community or the project staff, the operational demands of the project eventually take over and its participatory objectives and goals are sidelined.

One of the theorized benefits of participation is that it creates development 'demand driven' which improves the match between what a community needs and what it obtains (McLean et. al, 2001).

2.3 Local Economic Development

LED is a process that brings together resources from within and outside the community to address challenges and to promote economic growth in a systematic and organized manner at the local level. LED does not just happen; a local community needs to coined its own economic assets, decide upon a common strategy and organize itself to implement the strategy. The CBD allows local communities to raise funds towards infrastructure needed to support the development of their areas. A large amount of LED is planning to use the community based development infrastructure approach to self-help and to use the voice of the community by themselves (EGAT/UP, n.d).

LED offers local government, the private and not-for-profit sectors (NGO) and local communities the chance to work together to improve the local economy. It focuses on improving competitiveness, increasing sustainable growth and ensuring that growth is inclusive. LED includes a range of disciplines including physical planning, economics and marketing. It also includes many local government and private sector functions containing environmental planning, business development, infrastructure provision, real estate development and finance (World Bank, 2011).

Thus, LED are about communities continually improving their investment climate and business facilitating environment to boost their competitiveness, retain jobs and improve incomes. Local communities respond to their LED needs in many ways, and a variety of methods can be taken that include: (World Bank, 2011).

- Investing in physical (hard) infrastructure;
- Investing in soft infrastructure (labor force and educational development, institutional)
- Targeting specific parts of the city for regeneration or growth (areas based initiatives);
- Supporting SME;
- Ensuring that local investment climate is an efficient for local businesses;
- Encouraging the formation of new enterprises;
- Attracting external investment that is nationally and internationally;
- Supporting the growth for some clusters of businesses;
- Supporting informal and recently emerging businesses;
- Targeting certain deprived groups

Among the mentioned, investing in hard and soft infrastructures is important and basic parts of LED that would probably enhance future investments.

LED, according to Helmsing (2003), it is a process in which partnerships between community-based group, the private sector and local governments are established to manage existing resource to create job and stimulate the economy of a definite territory. It highlights local control, using the potentials of human, institutional and physical resource. LED initiatives usually mobilize actors, organizes resources, develop new institutions and local systems through dialogue and strategic actions.

Furthermore, each community has a unique set of local conditions that either enhance or reduce the potential for LED, and it is these conditions that determine the relative advantage of an area in its ability to attract generates and retain investment. A community's social, economic and physical attributes will guide the design of, and approach to, the implementation of local economic development strategy.

In developed countries LED has been widely practiced both by local government and the community (Nel, 2001). Communities within and between regions often contest to attract external and local investment; yet, opportunities exist for communities to collaborate with each other to help all their economies grow. They can do this for instance, by supporting strategic infrastructure or environmental improvements that demonstrate a broad local impact. An association of local municipalities or regional governments working together can serve to facilitate LED efforts by acting as an intermediary between governments and the community.

According to Blakely (1994) who defines LED it as;

The process in which local governments or community-based organizations engage to stimulate or maintain business activity and employment. The principal goal of LED is to stimulate local employment opportunities in sectors that advance the community, using existing, natural, human and institutional resources.

It is evident that communities can't depend on strategies that stems from the national level in that there are times where local interests may clash with national interests. Thus, LED becomes mainly limited to address local economic problems.

Moreover, CBD has a number of broad aims; (Blakely, 1994).

- ❖ To stimulate public and community services
- ❖ To promote a sense of community
- ❖ To stimulate a self-help and empowerment
- ❖ To enhance living and working conditions within settlement and
- ❖ To contribute to the new generation of self-employment

Thus, a community-based approach (CBA) to local development requires the active participant of the local population in resolving issues that particularly matter to that community and to satisfy the needs of local communities by jointly deciding how to resolve local problems and jointly working to put those policies into action. Developing infrastructure and to improve the

quality and availability of public services through community self-help initiatives is among the support to local economic development.

Zaaijer and Sara (1993), also put LED clearly that it is essential and a process in which local governments and/community based groups manage their existing resources and enter into partnership arrangements with the private sector, or with each-other, to create new jobs and stimulate economic activity in an economic area.

Finally, LED also clearly requires the joint action of a range of stakeholders if it is to succeed. Community-based organizations have key roles to play in filling the development gap which exists and they need to be assisted in this endeavor. For communities to appreciate their capacity to rely on their own strength and to have key role is actually played by themselves in the local community: local government, and local society, that is, the people who belong to these local communities is now seen the center of the power for the local economic development (Inger, 2009).

2.4 Local Economic Development Theory

The LED approach provides a comprehensive framework of initiatives and actions that respond to the need to integrate the economic, social, political and institutional dimensions of development at the local level. As a consequence LED is a process that will provide different solutions according to place, culture, economic potential and political circumstances, as well as social and institutional environment.

Even though there were different approaches of LED in the past the new approach which Helmsing (2003) calls: “the new generation of LED” and according to him, the new generation of LED promotion is characterized by multi-actor; multi sector and multi-level. The former implies the success of LED depends on active involvement of public-private and non -profit actors. The multi sector shows importance of the public, private and community sectors of the economy in LED. This shows that not only public sector but also private and community sectors have significant contributions for local economy in making goods and services available for current as well as future consumption. The final point- multilevel- refers to LED success requirement that not only depend on local initiatives but also considers opportunities and threats

of global change. He defines the local initiatives by categorizing into three: community based economic development; enterprises development; and locality development.

CBD has a number of broad aims. The first one is to stimulate a sense of community; second, to promote self-help and empowerment; third, to contribute to the generation of self-employment; fourth to improve living and working conditions in settlements; and the fifth is to create public and community services (Helmsing, 2003).

One of the approaches to community development is basic service delivery. A pragmatic approach would be needed in the reform of basic services delivery which includes infrastructures. Unbundling can help to regulate which components in the service delivery process can be privatized either commercially or on a non-profit basis, which can be brought into the realm of community enterprise and which continue to require public sector direct responsibility. Public sanitation in Accra, Ghana is an example, where public latrines have been contracted to 51 small and medium enterprises (SMEs). Solid waste collection is privatized to a large international contractor, which in turn subcontracted to local small enterprises (Awortwi, 2001).

A community's social, economic, and physical attributes will guide the design and approach to the implementation of a LED strategy. To build a strong local economy, good practice verifies that each community should undertake a collaborative process to understand the nature and structure of the local economy and conducts an analysis of the area's strengths, weaknesses, opportunities and threats (SWOT). This will serve to highlight the key issues and opportunities facing the local economy (Gwen et.al, 2006).

Local authorities and communities need to identify services that can be delivered through community advantages in order to promote a dispersed and active network of service providers serving local communities. Community-based service delivery has some key components, namely that the workers who are selected by the community are in some way accountable to the community and that the service is usually in some form of Para-professional service (Khanya, 2002).

In conclusion, LED can therefore be a community-empowering process within which the benefits for the community are far reaching and where the inclusion of marginalized groups in processes to create their own prosperity to have a greater positive impact on development in the

area. Community-based service delivery is one way of strengthening the links between local communities and the local municipality (Abrahams, 2003).

2.5 Advantages of Community Based Development

A brief review of the literature reveals that an understanding of and an assurance to empowerment and participation are at the central part of CBD.

When people participate in defining visions for sustainable development for communities, in formulating strategies for equitable access to service & resources & in setting priorities for action, they readily commit to support the actions they have endorsed. Participation also improves their awareness of the interrelations between economic, social & environmental issues. This is highly significant features of infrastructures programs and carries important implications for LED.

CBD usually includes strengthening and financing inclusive community groups facilitating community access to promoting, and give information an enabling environment through policy and institutional reform. Experience proves that by directly trusting on poor people to drive development activities, CBD has the potential to make poverty reduction efforts more responsive to demands, more sustainable, more inclusive, and more cost-effective than traditional centrally led programs. CBD fills a critical gap in poverty reduction efforts, attaining immediate and lasting results at the grassroots level and complementing market economy and government-run programs. With these powerful attributes, CBD can play an important role in strategies in increasing development.

CBD is a way to provide social and infrastructure services and establish economic through enhancing security of the poorest. It facilities such as schools, health centers, police stations and water supply systems tend to have higher utilization rates and are better maintained when investment decisions are made by actors within them than outside the community. It can improve the effectiveness and efficiency of services in many ways. Community management of development investments usually results in lower costs and more productively employed assets. Community-organized irrigation systems in Asia studies for instance shows, they have repeatedly found that systems built and operated by the farmers themselves often without much external support, generate a higher level of agricultural productivity than more modern systems constructed by government agencies with substantial external assistance (Lam 1998; Tang 1992).

One of the advantages of this approach is it makes development more inclusive of the interests of community and vulnerable groups. The existence of transparency and accountability are important safeguards to prevent corruption or the capture of community resources by elites rather it increases the speed and directness with which contributions of community for infrastructural developments.

Additionally, control over decisions and resources can also give communities the opportunity to build social capital defined as the ability of individuals to secure benefits as a result of membership in social nets by expanding the depth and range of their networks. This kind of network development which is critical for long-term growth and development similarly has positive short-term effects on welfare and risk exposure.

The advantages of community based developments are information sharing among them that minimizes cost and time, a harmony that is easy to mobilize resources, and they benefit from the market value of labor force and other inputs. The prevalence of social sanctions is an important factor for the responsibility of each member in the community (Abdul, 2011).

Thus CBD have many advantages that benefits society to access services especially for deprived and marginalized areas through infrastructural uses.

2.6 Challenges of Community Based Development

Many governments have considered various steps to promote CBD in their countries. But lack of capacity in the public sector remains to be one of the major problems in implementing it. In the absence of such established institutional arrangements and resource materials, public officials face problems in project development and implementation. Generally public can have many misunderstandings about CBD, many local governments still have a complex infrastructure which inhibits the ability of communities to respond to progress (Abdul, 2011).

Community based development chain several roles, serving people set up groups, supporting forums and networks, and establishing events and activities that let people to work together across organizational and community margins. It actively challenges social exclusion, divisions, and discrimination that discourage some people in communities from participating in activities and decision-making. But in many places only one or two of these parts are present, which

declines the impact and contributes to the misperception about what community development is (CDF, 2007).

The major problems of CBD are; the most deprived people receive poor quality of services and is least representing their needs to authorities. Units of the local people are not able to participate in actions that are planned for the entire community because biases, norms and social changes are not undertaken (TWC, 2006). Community leaders and representatives are not properly selected and held accountable, and may struggle or be unproductive on partnership panels. Public agencies and sectors that need to engage with local communities are unaware of each other's works, lack insight into how communities work and have few channels for dialogue with them. Many people doing CBD work feel secluded and lack support, though a sum of regional, sub-regional and local networks are in presence (CDE, 2007).

Major exercise and training chances in community development are not widely accessible. There is an uneven spread of short-term training in specific aspects of CBD work (William, 2007). It is accepted that problems can only be resolved by administration and people together; hence society needs now more than ever a strong community development work with clear objectives and public endorsement.

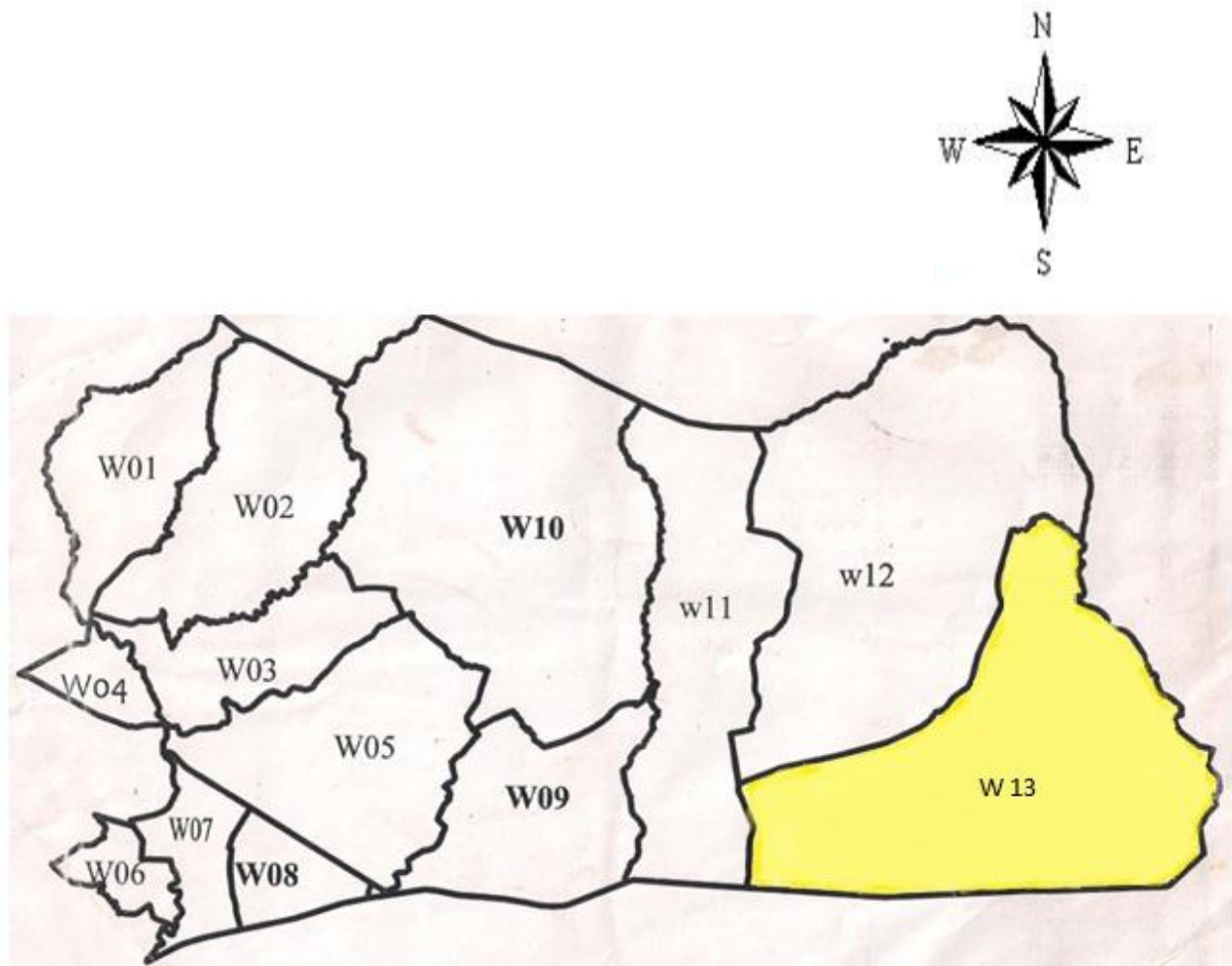
CHAPTER THREE

SITE SELECTION AND RESEARCH METHODOLOGY

This chapter covers Yeka sub city's geographical description, current demographical status and infrastructural status. Furthermore, the chapter also discusses the methodology part of the study.

3.1 Site Selection

Figure 3.1 Map of Yeka sub city



Source: Yeka Sub City Administration

3.1.1 Description of Study Area

Addis Ababa is the capital of Ethiopia which is undergoing a major transformation more importantly as evidenced by the development of road networks, schools, healthcare institutions, hotels, condominiums, real estates, banks, shopping centers, and many other businesses and many more developmental efforts.

Addis Ababa city administration has 10 sub city administrations under it which includes Akaki Kaliti, Nefas Silk-Lafto, Kolfe Keraniyo, Gulele, Lideta, Kirkos, Arada, Addis Ketema, Yeka and Bole administrations. From the 10 sub administrations of Addis Ababa, the study focused on Yeka sub-city in that there are many constructions that are undertaken in sub-city which might help us to assess the contribution of community based infrastructural developments. And it has an estimated area of 8265.02 HC.

Yeka sub-city has 13 Woredas. From the 13 Woredas, Woreda 13 was chosen as a case area for it has the highest rank in the overall community development works for the past 8 months of the year 2012/2013 starting from July, 2012 (DBADB, 2013). In further, Woreda 13 has seven districts ‘Tabia’ namely Meri, Meserek Luke, Merab Luke, Legejila, Lemlem Amba, Fanuel and Hayat Tafo. And it has a total area of 1438.951HC.

In concomitant to the above, three districts were chosen purposively according to their rank of community based infrastructure development with the ranks of high, medium and low; Meserak Luke, Hayat Tafo and Fanuel respectively were chosen for the study.

Table 3.1 Rank of CBD in infrastructure within districts under Woreda 13

Name of district	Hayat Tafo	Fanuel	Meri	Meserak Luke	Merab Luke	Legejila	Lemlem Amba
Result in %	79	58	91	94	87	70	79
Rank	4	6	2	1	3	5	4

Source: Woreda 13 Administration Yearly Report, 2004 E.C.

3.1.2 Demography Status

The total population of Yeka sub city according to the 2007 census was around 346,664 from this population the male population was around 46.7% which is about 161,592 and the rest female population was 53.3% which is about 185,072 (YSCA, 2008).

Furthermore, the population number of the woreda 13 was 55,035 from which the male population accounts for 26,241 which was 47.7% of the total population, and the female totaled about 28,794 which was 53.3% (ibid).

3.1.3 Infrastructural Status

In Yeka sub-city, there are many community based infrastructural developments projects that classified under the category of economic, social, green and other developmental works. Some of social developmental works are public toilet, public shower, 'bono' (stand pipe), police station etc. and under economic development are asphalt roads, pistol, bridges, and ditch. Also there are green community based infrastructural developments which are basically working in planting trees to create clean and fresh environment. Out of these categories social and economic infrastructural developments are currently constructed by the majority of community. CBD is creating many jobs temporarily and permanently like as a daily labor, police men and, for SME in giving them a first chance in bidding for the necessary material needed during the constructions of CBID. Accordingly, it is even creating a market linkage (DBADB, 2013).

Table 3.2 Yeka sub city community based development infrastructural status

No	Name of the Projects	Measurement	Work Done	
1	Pistil road	K.m	7,242	
2	Drainage	M	20,828.58	
3	Tunnel and man hole	M	948.02	
4	Cobble stone	K.m	16,803.35	
5	Sub base	M	50,501.57	
6	Police station	In number	10	
7	Bono	In number	6	
8	Medium bridges	In number	12	
9	Drainages maintenances	M	3,513.9	
10	Street light	In number	8	
11	Public toilet	In number	3	
12	Paved stone road	K.m	690	
13	Public shower	In number	1	
14	Supporting wall/flood preventive/	M	8.15	
15	Green development	M ³	4,218	
	➤ Planting of trees	In number	503	
16	Road maintenance	M	5,190	
17	Dust bean	In number	417	
18	Security tower	In number	2431	
19	Employment creation	In number	Male	2,431
			Female	1,262
20	Market Linkage	In money	1,248,991.04	

Source: Yeka sub city administration community based development annual report of 2004-2005 E.C

3.2 Research Methodology

3.2.1 Data Type and Source

Throughout the course of the work, the study relied on both primary and secondary sources that included both qualitative and quantitative types of data to generate relevant and valuable information. The primary data were mainly collected using questionnaires and in-depth semi structured interviews with the district and sub city officials.

Related to the above, the study also used secondary data, mainly collected from official records of district ('Tabia') level, archival research from books, journals, and manuals, annual reports of the sub-city, magazines and others.

3.2.2 Research Design

The methodological approach for this study is described as a case study of Yeka sub city in Addis Ababa within the quantitative and qualitative descriptive research spheres. Moreover, data were collected once from a sample selected to describe the larger population at that time, i.e. Cross sectional data.

3.2.3 Methods of Data Collection

The study employed descriptive analysis to examine and describe the status of community based infrastructure development and the role they play for local economic development. In this study both quantitative and qualitative methods were applied. The major reason for relying on both methods was that community based development is elusive and wide-ranging concept which is intimately related with community's role and participation that contribute for local infrastructure development. This concept requires the use of varied methods so as to come up with the valid and credible results. Accordingly, quantitative and qualitative data were obtained from different primary as well as secondary sources.

The primary data include in depth close and open ended questions and semi structured interviews. Cognizant to the above, questionnaires were prepared for the targeted population of the study, and additionally, for the ease of respondents the questionnaires were translated to local language Amharic. Additionally, the questionnaire is translated to Oromifaa for Hayat Tafo districts designed for some of respondents. Moreover, the semi structured interviews were conducted with higher sub city and district officials as key informants. Furthermore, the

interview was also conducted with representatives of Edir and committee that may have an involvement with the woreda administration and higher administrators.

In addition, the secondary data was obtained from sources like reports, research prepare documents and so on. These all has permitted the researcher to exhume respondents' overall perception of community based infrastructure development to local economic development.

3.2.4 Sampling Design

The study employed both purposive and systematic sampling techniques in selecting the districts and participants respectively. The selection of Woredas (districts) of the Yeka sub city was purposely chosen which helped to see how the communities participate in the developmental aspects. Also systematic sampling method was used to select respondents to fill the questionnaire.

Furthermore, the selection for higher sub-city officials as key informants for interview purpose was also selected purposively. This generally enabled the study to carefully understand and get the full picture of community based development for local economic development; infrastructure in Yeka sub city. The sample population to be studied of the three districts which were selected purposively totals 16,000. The three districts with their respective total number of population are 9,000 Hayat Tafo, 6,000 Meserak Luke and finally 1,000 Fanuel.

The districts were selected purposively according to their community based infrastructure developments results. That is, the highest, middle and small community based development efforts and this selection is vital for comparing and contrasting of community based infrastructure development aspects.

There are several ways for determining the sample size and for this study the researcher used a simple formula from Yamane to determine the sample size. Yamane provided a simplified formula to calculate sample sizes. This formula was used to calculate the sample with a 95% confidence level and $e = 0.5$ are assumed (Yamane, 1967 cited in Glenn, 1992). The formula is depicted as follows;

$$\begin{aligned}
n &= \frac{N}{1+N(e)^2} \\
&= \frac{16000}{1+16000(0.05)^2} \\
&= \underline{390}
\end{aligned}$$

Where, n= sample size
N=population size
e=the level of precision

This sample size was allotted to three Tibias' 'district' using proportionate stratified sampling formula. Through this formula each Tabia is fairly represented as follow:

1. Sample size for Meserak Luke $\frac{6000*390}{16000} = 146.25 \approx 147$
2. Sample size for Hayat Tafo $\frac{9000*390}{16000} = 219.375 \approx 219$
3. Sample size for Fanuel $\frac{1000*390}{16000} = 24.375 \approx 24$

As already mentioned above among the target population of 16000, the researcher took 390 respondents as calculated based on the above formula.

Table 3.3 The target district and their respective sample size taken from district

	District	Number of population	Weights given	Sample selected
1	Meserak Luke	6,000	37.5%	147
2	Hayat Tafo	9,000	56.25%	219
3	Fanuel	1,000	6.25%	24
	Total	16,000	100.00	390

Source: Own calculation, 2013

3.2.5 Method of Analysis and Model specification

3.2.5.1 Data Presentation and Analysis

In order to gather first-hand information, different data collection instruments/tools such as key informant interview and questionnaires was prepared and utilized for different categories of respondents and participants for the study. Particularly, the respondents were asked to explain their agreement with different items concerning CBID that it has a contribution for local economic development collected via questionnaire. As a result, data collected from the questionnaire was edited, coded and made ready for the analysis.

On the other hand, data collected through interview was analyzed by using content analysis where to identify coherent categories, themes and patterns of the data. Then, patterns and connections within and between the categories were examined by assessing relative importance of different themes. Finally, these subjects and connections brought together for interpretation.

Moreover, SPSS and STATA11 software packages were employed to prepare the simple quantitative tools like frequencies, percentages and means, and to explore the explanatory variables of regressions respectively so that the analysis can give a meaningful interpretation to draw conclusions and implication.

For all stated data presentation methods, a mix of descriptive, statistical and regression analysis were used.

3.2.5.2 Model Specification and Explanation of Dependent and Independent Variables

In this part of the paper tried to measure the impact of having strongest community on level of security, access to employment, access to safe drinking water, level of economic activity on the location and house rent in comparison to other locations (the counter factual) with average and weakest community development efforts.

In measuring the impact of having the best community based infrastructural development (CBID) efforts we could use OLS (Ordinary least square model) of the following form assuming there are n observations and k control variables

$$Y = X\beta + \tau D + \varepsilon \dots\dots\dots 1$$

Where (Y) is n dimension vector of outcome variable say distance to nearby water supply, level of employment, level of safety and security, income and soon. X is a $n \times k$ matrix of independent variables that can effect outcome. β is k dimensional vector representing parameters, which show the marginal effect of those independent variables. D is treatment dummy taking value of 1 for those with strongest community and 0 other wise. τ is the average treatment effect on treated. Means what is the average effect of being located in area with strong community moment, holding other things constant. Formally

$$\tau = E[Y / D = 1, X] - E[Y / D = 0, X] \dots\dots\dots 2$$

The problem is for this result to be accepted the allocation to treatment, to be located in area with strongest community, (or equally to none treatment) should be random. Say poor people will normally have strong community ties or state may select community development more effectively in such location. They are also a community with low capability (resources) to implement community development program. As a result in comparison, with rich locations with weak community but higher wealth they may create low level of employment, though the community was effective in improving community employment opportunity. If rich and poor people were randomly distributed to treatment and control groups simple OLS can control such effect by including wealth or income among the independent variables or X . However if the selection to treatment is based on self-selection or external selection, we need to control for such effects. This is because the inclusion of such variables in the model will be effected by omitted variable bias (Khandker et al, 2010). If we say allocation to treatment (D) is function Z which represents observable variables and u unobservable variables

$$D = f(Z, u) \dots\dots\dots 3$$

The error terms (ε) in equation 2 or outcome equation and treatment equation or equation 3 (u) will not be independent or $E(\varepsilon u) \neq 0$ as result all parameters in equation 1, if estimated through OLS, are biased and inconsistent (Khandker et al, 2010). That is why we need to model both the treatment equation and outcome equation explicitly to solve this problem.

In literature there are many methods that can be used to control such effect. One is Heckman treatment model (Davidson and MacKinnon, 1999; Verbeek, Marno, 2006 and soon). Another is Propensity Score Method (PSM) or as commonly called matching (Rosenbaum and Rubin, 2006). The third method is endogenous switching method (Miranda and Rabe-Hesketh, 2006). Let's start from the first one.

Even though community based infrastructural development (CBID) is promoted in all locations by the state there is possibility for self-selection into making their community strong community or not. Means some communities members may select to make their community strong and other

communities in other locations may prefer to ignore it. Moreover people may rent house or build house in locations which is in line with their preference and those preferences could affect selection to treatment.

Let's take the choice to be member of strong community or decisions to strength the community is represented by D . If $D=1$ it means you choice to be part of the treated group or you choice to be part of strong community and if not $D=0$ will hold, means you are in control group. Let's say choice to be in treated group is function of different observable variables represented by Z , which is matrix with dimension $n \times m$ assuming there are n observations and m variables. So, assuming linear utility function, the utility of being in treatment group and control group, respectively, will be given as following

$$U(D=1) = Z\theta_1 + u_1$$

$$U(D=0) = Z\theta_0 + u_0 \dots\dots\dots 4$$

Note that θ_i are parameters and u_i are random variable representing the effect an unobservable determinants of utility. So the net utility of being in strong community

$$U(D) = U(D=1) - U(D=0) \text{ is}$$

$$U(D) = U(D=1) - U(D=0) = (Z\theta_1 + u_1) - (Z\theta_0 + u_0) = (Z\theta_1 - Z\theta_0) + (u_1 - u_0) = Z\theta + u \dots\dots 5$$

given $\theta_1 - \theta_0 = \theta$ and $u_1 - u_0 = u$. So people will self-select to be part of strong community if the net utility is greater than zero.

$$P(D=1) = P[Z\theta + u > 0]$$

$$P(D=1) = P[u > -Z\theta] \dots\dots\dots 6$$

If we assume any symmetric distribution like normal or logistic distribution for the compound error term (u) this implies

$$P(D=1) = \Phi(Z\theta) \dots\dots\dots 7$$

Means the probability of self-selecting in to treatment is simply a cumulative probability evaluated at value equal to $Z\phi$ and the probability of not self-selecting will be

$$P(D=0)=1-\Phi(Z\theta) \dots\dots\dots 8$$

To move from this step forward we need one assumption. **Conditional independence assumption** (Khandker et al, 2010) or simply we need to assume all important variables which effect selection are included and whatever that is left to be represented by the error term (u) is randomly distributed. If the above assumption is satisfied the error terms will be independent among observations. Means there are random variables which effect selection for one observation (u_i) and for another observation there are other random variables (u_j), but if both are random there will not be any association between these groups of random variables or formally $E(u_i u_j / i \neq j) = 0$. This is important assumption as we will see it below because the next step cannot be done without this assumption.

Assuming conditional independent distribution means the probability to participate or not is independent or is random after controlling for Z means all important variables which effect selection are included within Z and those which are not included are randomly distributed; the joint likelihood of observing the sample as it is observed is given by the following likelihood function

$$L = \prod_{i=1}^{n_1} P_i(D=1) \prod_{i=1}^{n_0} P_i(D=0) = \prod_{i=1}^n P_i(D=1) P_i(D=0)$$

$$L = \prod_{i=1}^{n_1} (\Phi(Z\theta)) \prod_{i=1}^{n_0} (1-\Phi(Z\theta)) \dots\dots\dots 9$$

This is simple joint probability and is simple product of each person's probability because they are independent. If they were not independent or if the conditional independence assumption does not hold, this method will not work because it will break at this point. Taking logarithm of both sides, it will give us the log likelihood function

$$LL = \sum_{i=1}^{n_1} \ln(\Phi(Z\theta)) + \sum_{i=1}^{n_0} \ln(1-\Phi(Z\theta)) \dots\dots\dots 10$$

By imposing the conventional distribution assumptions on the error term (either normal or logistic) we can estimate the parameters θ though maximum likelihood method (ML). This will

help us to estimate the latent variable, representing the net benefit or utility of selecting strong community $[U(D)]$ as given in equation 5 and replicated below for convince

$$U(D) = U(D=1) - U(D=0) = (Z\theta_1 - Z\theta_0) + (u_1 - u_0) = Z\theta + u \dots\dots\dots 5$$

If we bring the OLS treatment model of equation 1 here

$$Y = X\beta + \tau D + \varepsilon \dots\dots\dots 1$$

The error terms in the selection model (u) and the OLS treatment model (ε) will not be independent or formally $E(\varepsilon u) \neq 0$. Now let's divide the above error term (ε) as in two parts

$$\varepsilon = \varepsilon_1(Z\theta) + \varepsilon_2(u/Z\theta) \dots\dots\dots 6$$

The first one is showing the effect of observable selection variables and the second one the conditionally independent error terms. If we can find a way to find proxy representative for the first one in the form of inverse mill ratio for treatment we can factor out the first error.

To do so after getting estimate of $Z\theta$ we can develop the following inverse mill ratio of treatment model (Davidson and MacKinnon, 1999)

$$\lambda(Z\theta) = \frac{D - \Phi(Z\theta)}{\Phi(Z\theta)[1 - \Phi(Z\theta)]} \phi(Z\theta) \dots\dots\dots 11$$

Note here ϕ is density function and D is the dummy of treatment and control. This is related to inverse mill ratio used in Heckman selection model but modified to handle selection with in treatment model. If we add the inverse mill ration within the OLS model we can solve the problem

$$Y = X\beta + \tau D + \delta\lambda + \varepsilon$$

$$Y = X\beta + \tau D + \varepsilon_1(Z\theta) + \varepsilon_2(u/Z\theta)$$

$$Y = X\beta + \tau D + \delta\lambda + \varepsilon_2(u/Z\theta)$$

$$Y = X\beta + \tau D + \delta\lambda + \varepsilon_2 \dots\dots\dots 12$$

So if conditional independence assumption is satisfied ε_2 will be random and the problem is solved. If there is selection problem δ has to be significant, if not there is no selection problem. However this also demands that there is at least one identification variable in Z which is not part of X to make our result independent of the distributional assumption we impose on selection model. If not our model is sensitive to our choice of distributional assumption that is logit, normal or otherwise. Assuming the last condition is satisfied we can consistently estimate both the selection models that and its latent variable (U) and the impact equation (Y) by Heckman two stage treatment model.

The problem in this paper is that outcome variables (Y) are latent or unobservable as represented as level of improvement in terms of a given choices. The data is collected in form of the following question for security for example: “Compared to pre CBID and now, what do you think about the level of safety and security?” The choice are in form of 1) improved 2) the same 3) get worst. Notice here as the value increase dissatisfaction increase.

The latent variable is the differential level of security (security before minus security now) that we don’t observe we just observe if there is improvement, if it is negative (security before < security now); we observe the same, if security before = security now, and we observe getting worst if (security before > security now). But we don’t observe the actual level of differential security ($S = \text{security before} - \text{security now}$). Let assume differential dissatisfaction on security S is linear function of control variables X and treatment dummy D , both as defined above for OLS model.

$$S = X\beta + \tau D + \varepsilon$$

$$S = X\beta + \tau D + \varepsilon_1 + \varepsilon_2$$

.....13

If we can observe S the above method can be used, but we observe only three cut points in S in form of Y , that is

$$\begin{aligned}
Y = 1 & \text{ if } S < 0 \\
Y = 2 & \text{ if } S = 0 \\
Y = 3 & \text{ if } S > 0
\end{aligned}$$

.....14

Now imagine standardized SS or

$$SS = \frac{S - E(S)}{\sigma_s^2}$$

.....15

We can estimate SS none linearly by using ordered probit or logit (Small, 1984) starting from the Y values. Let's take 2 cut points in SS in form of c_1 and c_2 . So

$$\begin{aligned}
P(Y = 1) &= P(S < 0) = P(SS < c_1) \\
P(Y = 2) &= P(S = 0) = P(c_1 < SS < c_2) \\
P(Y = 3) &= P(S > 0) = 1 - P(SS < c_2)
\end{aligned}$$

Now let's put equation 13 (after standardizing the S in to SS) in to equation 16

$$\begin{aligned}
P(Y = 1) &= P(X\beta_s + \tau_s D + \varepsilon_s < c_1) \\
P(Y = 2) &= P(c_1 < X\beta_s + \tau_s D + \varepsilon_s < c_2) \\
P(Y = 3) &= 1 - P(X\beta_s + \tau_s D + \varepsilon_s < c_2)
\end{aligned}$$

Where $SS = X\beta_s + \tau_s D + \varepsilon_s$ is a standardized version of equation 13. Simple arithmetic manipulation will give us

$$\begin{aligned}
P(Y = 1) &= P(\varepsilon_s < c_1 - X\beta_s + \tau_s D) \\
P(Y = 2) &= P(c_1 - X\beta_s + \tau_s D < \varepsilon_s < c_2 - X\beta_s + \tau_s D) \\
P(Y = 3) &= 1 - P(\varepsilon_s < c_2 - X\beta_s + \tau_s D)
\end{aligned}$$

If we impose any symmetric distribution which includes either normal or logistic we can get ordered probit or ordered logit, respectively. Imposing distribution we will get

$$\begin{aligned}
P(Y=1) &= \Phi(c_1 - X\beta_s + \tau_s D) \\
P(Y=2) &= \Phi(c_2 - X\beta_s + \tau_s D) - \Phi(c_1 - X\beta_s + \tau_s D) \\
P(Y=3) &= 1 - \Phi(c_2 - X\beta_s + \tau_s D)
\end{aligned}
\tag{19}$$

And we can follow to estimate likelihood function in form of assuming the error terms are independent

$$L = \prod_{i=1}^{n_1} \Phi(c_1 - X\beta_s + \tau_s D) \prod_{i=1}^{n_2} \Phi(c_2 - X\beta_s + \tau_s D) - \Phi(c_1 - X\beta_s + \tau_s D) \prod_{i=1}^{n_3} 1 - \Phi(c_2 - X\beta_s + \tau_s D)
\tag{20}$$

However since there is selection to treatment they will not be independent and it is common sense to add the inverse mill ratio of treatment given in equation 11, above, in the estimation to make them independent in the following form

$$L = \left[\prod_{i=1}^{n_1} \Phi(c_1 - X\beta_s + \tau_s D + \delta\lambda) \prod_{i=1}^{n_2} \Phi(c_2 - X\beta_s + \tau_s D + \delta\lambda) - \Phi(c_1 - X\beta_s + \tau_s D + \delta\lambda) \prod_{i=1}^{n_3} 1 - \Phi(c_2 - X\beta_s + \tau_s D + \delta\lambda) \right]
\tag{21}$$

This could make the error terms independent but the estimated parameters are an approximation because the inverse mill ratio for treatment given in equation 11 is developed for linear functions not for such none linear function (Miranda and Rabe-Hesketh, 2006). So both equation 12 and 20 are approximations but are not BUE (Best Unbiased Estimate). To deal with this problem we can use endogenous switching model (Miranda and Rabe-Hesketh, 2006). Let's use equation 5 and 13 again

$$U(D) = Z\theta + u
\tag{5}$$

$$S = X\beta + \tau D + \varepsilon = X\beta + \tau D + \varepsilon_1 + \varepsilon_2
\tag{13}$$

Now let's decompose the error term in equation 5 in two parts, one related to error term $(\varepsilon_1(t))$ in equation 13 $(u_1(t))$ and another independent error term (u_2)

$$U(D) = Z\theta + u_1 + u_2 \dots\dots\dots 22$$

The selection problem or any endogenous-ness problem is create because of the fact that $E(\varepsilon u) = E(\varepsilon_1 u_1) = \sigma_{\varepsilon u} \neq 0$. If we assume the relation those two error terms to t is linear in form of

$$\begin{aligned} \varepsilon_1 &= t + \nu \\ u_1 &= t + \varsigma \end{aligned} \dots\dots\dots 23$$

Where ν and ς are independent random variables or $E(\nu\varsigma) = 0$, we can factor out t from the integration function by using adaptive quadrature method introduced in to selection models by Miranda and Rabe-Hesketh, (2006) equation 5 and 12 will give us

$$\begin{aligned} U(D) &= Z\theta + \varsigma + u_2 = Z\theta + \gamma \\ S &= X\beta + \tau D + \nu + \varepsilon_2 = X\beta + \tau D + \chi \end{aligned} \dots\dots\dots 24$$

Since $E(\gamma\chi) = 0$ We can consistently estimate the average treatment effect on treated (ATT) or τ by using equation 21 and the determinant of self-selection in to treatment given in equation 9 and 10, in one stage Maximum likelihood (ML) estimation. This model has one additional advantage over Heckman two stages given it allows people to select where they live based on the strength of the community. Means both selection and outcome can be co-dependent on each other while in Heckman two stage only outcome is allowed to depended on self-selection process.

The problem with the above model is that δ may turn out to be insignificant or equally $E(\varepsilon u) = 0$ means there is no self-selection problem, we may not find identification variable and our result may be highly sensitive to distributional assumptions we impose and far worst conditional independence assumption may not hold if some important variables that effect selection are not included in the selection model. Assuming the third problem does not exist we

can deal with the first two problems by using Propensity Score Method (PSM) of Rosenbaum and Rubin (2006) or matching as it is commonly known.

Let say community strength is exogenous to the people. This may happen due to many reasons. First community development in Addis Ababa is state based initiative than being spontaneous and evolutionary. As result people may end up being in strong community because state decided to make it strong. Second the power distribution within the community may not only skew to the powerful elite within the community but also to the powerful elite with loyalty to state. As result people may end having strong community because the elite prefer to make it strong. Third most people who are concerned on local development would be house owners not renters and for renter's community social capital could be relatively less important especially in towns like Addis where house rent market is highly flexible. So assuming all important variables that affect the probability of being in on treated group than control group are included we can match similar persons which are the same in terms of those variables. Say if education is one variable, we find someone with the same education in both treatment and control group, then we match them by other variables. So we find two people with the same value for those variables (let's call them Z) in both treatment and control group. Then we can find the difference between them and the average of those differences will give us the average treatment effect on the treated (ATT) or the average effect of being member of strong community in comparison to being member of other communities. Formally

$$ATT = \tau = E(Y_1 / D=1) - E(Y_1 / D=0) \dots\dots\dots 25$$

Note here Y_1 is the impact on those treated group. But $E(Y_1 / D=1)$ is their observed average effect given they are treated and $E(Y_1 / D=0)$ is the average effect if they were not treated. The problem is we only observe when they are treated so we cannot estimate this. What we do is by matching with the control group we find people which are similar in everything except treatment so we use Y_0 from those groups to get the counter factual

$$\tau = E(Y_1 / D=1) - E(Y_1 / D=0) = E(Y_1 / Z, D=1) - E(Y_0 / Z, D=0) \dots\dots\dots 26$$

The problem is if we have more than one variable in Z this could be tedious process and simply impossible to find match that is why we have to predict probability of being treated as following

$$P(D=1) = P(Z\theta + u > 0) \dots\dots\dots 27$$

Z is the latent variable which effect selection, it represents reasons why some community are strong and other communities weak as they are exogenously selected. Assuming symmetric distribution for the error term simple arithmetic manipulation will give us

$$P(D=1) = P(u > -Z\theta)$$

$$P(D=1) = P(u > -Z\theta)$$

$$P(D=1) = 1 - \Phi(-Z\theta) = \Phi(Z\theta) \dots\dots\dots 28$$

It is shown by Rosenbaum and Rubin (1983), developer of the model, matching by Z is the same as matching by $\Phi(Z\theta)$.

$$\tau = E(Y_1 / Z, D=1) - E(Y_0 / Z, D=0) = E(Y_1 / \Phi(Z\theta), D=1) - E(Y_0 / \Phi(Z\theta), D=0) \dots\dots 29$$

This will give us single variable to match. If we estimate the $\Phi(Z\theta)$ by logit or probit model using equation 9 or 10 given above we can match them based on their probability of being selected or $\Phi(Z\theta)$. However finding specific match is hardly possible as the probability of single number is zero for continuous variables. That is why we have to select optimal band of inclusion (band width) to match them. This can be done in four different ways that is Nearest-Neighbor Matching, Radius Matching, Kernel Matching and Stratification Matching. The Nearest-Neighbor Matching uses the nearest matching probability no matter its distance. If the probability of treated is 0.1 and the nearest probability in control group is 0.15 this observation in the match will be used counter factual. The problem is if the nearest is 0.5 it will be used too; this is problem in some data sets as it can find distant matches. The radius matching uses all those who are found in specific distance (radius) of the probability say the radius selected is 0.05 so those found in range 0.05 and 0.15 will be used and their average will be taken as counter factual. The Kernel Matching uses all observations but Kernel weight is given based on distance from the treated probability. Means 0.11 will get high weight as it is close 0.1 compared to 0.9

which will get low weight. The Stratification Matching will stratify the observations to create equal average treatment effect among treated and control observations until all strata are having the same average. Then each stratum in both groups is taken as match on average and weighted average is used to measure average treatment effect, the weight being number of observations in each stratum (Becker and Ichino, 2002). There is no any way to know in advance which one is better so it is always advisable to check the result by considering all methods for robustness (ibid, 2002).

The problem in this specification is that to estimate $\Phi(Z\theta)$ we can use the log likelihood function used which assumes conditional independence of the error term over observations. If this condition is not satisfied it will lead

$$E[Yu / \Phi(Z\theta)] \neq 0 \quad \text{and} \quad E[Zu / \Phi(Z\theta)] \neq 0 \dots\dots\dots 17$$

Means the selection variables would be correlated with the error term and the outcome variables will be dependent on those unobserved none random variables and will effect outcome (Becker and Ichino, 2002). Notice again to develop the log likelihood function for Probit and logit model used in estimating propensity score in equation 9 and 10 we have to assume conditional independence which is valuated if the above condition does not hold. But since this is mostly sponsored and promoted program and power distribution with in community is not equal, those omitted variables will not be correlated with those treatment variables or $E[Zu / \Phi(Z\theta)] = 0$ will hold. As result treatment will be orthogonal to the (independent of the) error term or formally $D \perp u$ as result $E[Yu / \Phi(Z\theta)] = 0$ or $D \perp Y$ will hold. In this paper both methods will be represented for robustness. However we cannot rule out the existence of conditional dependence so we have to take this problem as limitation of the paper. Notice here this is common to all three models stated above and they will not work if conditional independence assumption is not satisfied. Means if important variables which effect external selection or self-selection to treatment are not included and are not random, the result have to be accepted with logical reservation.

Moreover propensity score need the outcome variable to be observed but is not. So we have to interpret the direction (the sign) of the effect but not the value itself, since it does not make any

sense. Additionally PSM method does not take in to account the effect of other variables that effect perception in addition to variables which effect selection. Say security is improved but males may fail to notice it but females may do, so we have to control gender but normal PSM unlike Heckman treatment model does not control for such effect. Once the models are specified lets introduce the variables used in this impact assessment.

3.2.5.3 Statement of Outcome, Independent and Dependent Variables Outcome variables

Table 3.4 The outcome variables that are represented in form of *Y* above are ordered variables showing level of dissatisfaction. These are;

Variable	Perceived effect compared before and after community given as choice				
	1	2	3	4	5
House rent on location	Improved	Stayed the same	Get worst	NA	NA
Level of peace and security	Improved	Stayed the same	Get worst	NA	NA
Access to clean water	Improved	Stayed the same	Get worst	NA	NA
Level of economic activity in the area	Very improved	Improved	The same	Worst	Very worst
Employment benefit	Yes	No			

Community based infrastructural development (CBID) focus its investment in cobble stone based road construction using labor intensive methods, expansion of public water distribution centers (locally known as bono), expansion of green developments and expansion of police posts among other things. So it is rational to expect strongest communities to have more positive effect on perceived level of peace security, access to safe drinking water and employment directly. Moreover, with investment on such local public goods, it is expected house values, rent and level of economic activity will increase as demand for such locations for business and resident demand will increase. In simple words, it is expected having the strongest community will have positive affect on those all outcome variables. How the strong communities are selected by the state based on wider array of factors which are not only linked to efficiency of outcome only but also type process used, fairness and also efficiency in wider arrays of

variables. As result there may not be any link between being strong in general and strength in specific activity.

Selection model

The dependent variable in selection model is a dummy ($D = best$) taking value 1 if the person lives in the best community and 0 other wise. The independent variables include

- 1) **Gender.** Takes value of 0 for male and 1 for female. Males can have more resources and access to make their community strong or to be part of the powerful elite. However at the same time females may have more strong social capital given the serious market and social failures they face could make them highly dependent on community. So the effect of gender can be positive or negative.
- 2) **Age:** a continuous variable and it also can have either negative or positive effect. In one side being young implies more energy more optimism and low discount value of future benefit, so willingness to invest for the future that he/she will be part of. But, age also effect level of participation in community informal institutions, more social respect and more social trust, which are important for CBID initiatives. As result older people may have more effect on CBID strength. Moreover state may select locations based on age composition of the population.
- 3) **Marital status:** is multivariate variable divided single, separated/widowed, married or divorced. In this case single persons could be more mobile with low social ties and separated and widowed persons may have more strong social ties. And this could affect the strength of CBID but state also may select locations based on marital status composition of the community.
- 4) **Education:** is multivariate variable divided between illiterate, elementary to junior high level, high school (9-12 grade), technical education and soon. In one side educated people would have more social respect and capacity to organize community but in other side they can tend to be independent from community, so the effect is again can be positive or negative.
- 5) **Employment:** is multivariate variable divided among students (there are many independently living students in the area), daily laborer, business owner, unemployed and house wife. Being unemployed may make people willing to participate on such projects for

employment sake or state may select them. Moreover state may focus on locations with large unemployed population or business persons may have the resource and the will to improve their locality.

- 6) **Nature of house ownership:** is multivariate variable includes house owners, house renters and those who live with family members. And those who rent house are divided in to those who rent from Kebele, Keraye betouch (State house agency which engage in renting houses) and private individuals. We expect people who rent form individuals to have less willingness to participate in such community activity since the market is very unstable.
- 7) **Wealth status:** is multivariate variable including very rich, better off, average, poor and very poor. The effect is also very complicated in this case. Poor people may need the CBID more than rich people from employment and access to safe drinking water so they may self-select. Moreover poor people may have more social ties and limited independence compared to rich people which help them to have strong informal institutions (like Edir) which can select them in to treatment. But again from security and roads point of view rich people may demand it and they may have more resource to make it effective. Moreover state may select the poor over the rich or vise verse.
- 8) **Trust:** Trust is a dummy variable taking value of 1 if the person thinks people in the community are trust worthy and 0 other wise. It is expected people who trust their community members will have strong social capital and will build strong CBID project.
- 9) **Number of years lived:** a continuous variable measuring how many years they were living in the community. It is expected people who live for longer time, in their community, are more effective in organizing the community or being member of the community inner circle to build strong CBID project.
- 10) **Awareness:** a dummy variable taking a value of 1 if they are aware about CBID activity and it is expected to have positive effect on CBID strength.
- 11) **Participation:** a dummy variable taking a value of 1 if they participate in CBID activity and it is expected to have positive effect on CBID strength
- 12) **Support at initiation:** a dummy variable taking a value of 1 if they have state support at initiation of the project and it could have negative or positive effect depending on the net effect of state on restricting their freedom and providing them more resource

13) **Support at management:** a dummy variable taking a value of 1 if they have state support at management stage of the project and it could have negative or positive effect depending on the net effect of state on restricting their freedom and providing them more resource

Second stage model for Heckman treatment model and endogenous switching model

The dependent variables are the outcome variables stated above and the independent variables for the 5 models are given below:

House rent on location (model 1): dependent variable perception about change on house rent value compared to pre CBID and the identification variables which effect selection to treatment but not house rent are support at initiation, support at management, awareness, age, gender, trust and participation. The independent variables are:

Best: a dummy variable taking a value of 1, if he/she live in best community or zero otherwise. It is expected to have positive effect. Notice here we are not interested in the remaining variables they are just control for perception.

Number of years lived: a continuous variable measuring how many years they were living in the community. People who live longer may have more understanding of the dynamics to break short term changes from structural changes and this may affect perception.

Wealth status: is multivariate variable including very rich, better off, average, poor and very poor. The rich may not perceive small changes in rent while the poor will. It is also expected wealth status could affect perception formation negatively.

Rented: a dummy variable taking a value of 1, if the person lives in private rent house and 0 other wise. Since this market is highly unstable it could easily effect their perception.

Business: a dummy variable taking a value of 1, if the person is owner of his own business and 0 other wise. The nature of rent change and its perception could be affected by being owner of business as business man or more sensitive to cost changes than average person.

Treatment: is inverse mill ratio of treatment defined in equation 11 above

Level of peace and security (model 2): dependent variable perception about change on peace and security compared to pre CBID and the identification variables which effect selection to treatment but not Level of peace and security are support at initiation, support at management, awareness, age, gender, trust and participation. The independent variables are:

Best: a dummy variable taking a value of 1, if he/she live in best community or zero otherwise. It is expected to have positive effect. Notice here we are not interested in the remaining variables they are just control for perception.

Number of years lived: a continuous variable measuring how many years they were living in the community. People who live longer may have more understanding to break short term changes from structural changes and this may affect perception.

Wealth status: is multivariate variable including very rich, better off, average, poor and very poor. It is also expected wealth status could affect perception formation. Say rich people may be more concerned about security than poor people.

Rented: a dummy variable taking a value of 1, if the person lives in private rent house and 0 other wise. People who live in very dynamic private rented house may have limited knowledge of the location and low interest on general security of the location, since they will move out if they find the security unattractive. But most importantly since they have option for changing location, they can be extra sensitive to small changes.

Business: a dummy variable taking a value of 1, if the person is owner of his own business and 0 other wise. The nature of rent change and its perception could be affected by being owner of business as people with business are more sensitive about security compared to others.

Treatment: is inverse mill ratio of treatment defined in equation 11 above.

Access to clean water (model 3): dependent variable perception about change on access to safe drinking water compared to pre CBID and the identification variables which effect selection to treatment but not Access to clean water are support at initiation, support at management, awareness, trust and participation. The independent variables are:

Best: a dummy variable taking a value of 1, if he/she live in best community or zero otherwise. It is expected to have positive effect. Notice here we are not interested in the remaining variables they are just control for perception.

Gender: Takes value of 0 for male and 1 for female. Since water is watched mostly by female we expect females to be more sensitive to water access than male.

Age: a continuous variable. Old people who cannot easily fetch water could be more sensitive to water related problems.

Employment: nature of employment will affect level of demand for water and also sensitivity so it could affect perception

Rented: a dummy variable taking a value of 1, if the person lives in private rent house and 0 other wise. People who live in very dynamic private rented house may have more sensitivity to water access as they have an easy option to move out to other locations.

Wealth status: is multivariate variable including very rich, better off, average, poor and very poor. Since this water source is mainly useful for those who cannot get their own tap water and the poor have limited access to alternative source, they are expected to be more sensitive.

Treatment: is inverse mill ratio of treatment defined in equation 11 above.

Level of economic activity in the area (model 4): dependent variable perception about change on access level of economic activity in the area compared to pre CBID and the identification variables which effect selection to treatment but not level of economic activity in the area are support at initiation, support at management, awareness, gender, trust and participation. The independent variables are:

Age: a continuous variable. The young is expected to be more sensitive to economic dynamics than the old who are already settled in life

Education: is multivariate variable divided between illiterate, elementary complete, junior high school, high school, technical education and soon. It is not clear how education would affect perception about level of economic activity but it is expected to affect perception. In one side educated people may see more than what is directly obvious but also the indirect effects. But in other side educated people may be busy in work and in life to observe minor dynamics in economic activity.

Business: a dummy variable taking a value of 1, if the person is owner of his own business and 0 other wise. Business people who are directly affected are expected to have more sensitivity

Wealth status: is multivariate variable including very rich, better off, average, poor and very poor. The poor which is highly effected by such micro changes is expected to be more sensitive to such effects

Treatment: is inverse mill ratio of treatment defined in equation 11 above.

Employment benefit by family member (model 5): dependent variable if family member is employed by CBID in the area compared to pre CBID and it is expected strong communities will create more employment than others. The identification variables which effect selection to treatment but not Employment benefit by family member are awareness and trust:. The independent variables are:

Gender: Takes value of 0 for male and 1 for female. Since females face more challenges more than male in labor market they may be very sensitive to such employment changes

Age: a continuous variable and it is expected the young to be more sensitive about employment issues than the older one

Education: is multivariate variable divided between illiterate, elementary complete, junior high school, high school, technical education and soon. The effect education is expected to be negative, educated people may perceive such blue color job as underemployment.

Employment: is multivariate variable divided among students (there are many independently living students in the area), daily laborer, business owner, unemployed and house wife. It is expected the unemployed and daily laborer to be more sensitive to employment changes.

Wealth status: is multivariate variable including very rich, better off, average, poor and very poor. The poor expected to be more sensitive to such blue color employments.

Treatment: is inverse mill ratio of treatment defined in equation 11 above.

CHAPTER FOUR: RESULTS AND DISCUSSION

This chapter presents the analysis and results from data obtained of 345 respondents using descriptive and econometric analyses.

The total sample respondents were about 390, however during the survey, the studied sample population was less than that of the total sample set due to non-response and return of the form by different reasons of respondents. This has made the total studied sample population to 345 respondents (88.46% of response rate).

In addition, the descriptive analysis was used for analyzing and describing the community level of local knowledge on infrastructural developments, the infrastructure needs of the community, the ownership statuses and continuity of infrastructure projects initiated by the community and finally the challenges faced by the community on the efforts of community based infrastructural developments. Additional to the above, the econometric analysis is employed to compare and contrast districts with high community based infrastructural developments and those with less CBIDs.

4.1 General Characteristics of Respondents

This part of the analysis discusses the general characteristics of respondents including sex and age distribution, marital and financial status, educational attainments, their occupation and others.

Table 4.1 Sex and Age distribution of respondents

		Age Group					Total	Percent
		15-25	26-35	36-45	46-55	56-65		
Sex	Male	84	105	14	10	18	231	66.95
	Female	44	48	6	14	2	114	33.05
Total		128	153	20	24	20	345	
Percent		37.10	44.34	5.79	6.96	5.79		99.99*

Source: Own survey, 2013

The above table 4.1 reveals that respondents were composed from both sexes, though female participation during survey was low comparing to the opposite sex. Regarding residences filling this kind of forms and participating in different issues like this, is mainly the responsibility of the male who is the sole household head.

Most studies indicate that gender is an important but largely neglected aspect of infrastructure planning and provision. Ozor and Nwankwo, (2008) explained in their research of Role of Local Community Development, gender was a major issue in community based infrastructure development. The result shown that women were not given equal opportunity for participation in community initiatives like their male counterparts and the study supports with the figure of gender bias of (- = 3.77%).

Women pay a particularly high price for the lack of infrastructure, in time spent searching water for domestic uses, marketing and processing food and other agricultural or non-farm products, gathering firewood and reaching health services for themselves and their families. In Tanzania for example, women spend four times as much time on transportation-related tasks than men (IFRTD, 2007). These 'time poverty' limits their ability to participate in community based infrastructure as workers during construction and as beneficiaries of the assets created (GREPB, 2010). In addition to that, the type of jobs they can do perceived traditional male/female division of labor affects their participation. For instance, Islamic law permits women to carry out virtually all construction works, except climbing ladders (ILO, 2010). Women also often marginalized during identification, implementation and design, limiting the positive effects on communities. Thus, this has contributed as a main reason for females to be non-participants in CBID.

Regarding the age distribution of respondents, most of them were found to be middle aged which is in the ranges of 26-35. Ethiopia is a predominantly young society, with 84 percent. The proportion of the population under age 15 is 45%, and in between 16-64 age is 51.8% with only 3.2 percent of above age 65. Those in the working ages (generally ages 15 to 59) have a lower dependency burden or fewer people to support with the same income and assets (Karin et.al, 2009). This directs most of the community members are youths. This implies that the construction of project may give a chance of employment for jobless youth.

According to Addis Ababa Community Based Ownership and Participation Work Plan 2003E.C, states that one of the principles of CBID is to enhance and increase the direct participation, and involvements of youth, female, and marginalized residents.

Table 4.2 Martial status of respondents

No.	Response	Frequency	Percent
1	Married	147	42.6
2	Widowed	10	2.9
3	Single	180	52.2
4	Divorced	8	2.3
	Total	345	100.0

Source: Own survey, 2013

The result of the above table shows most of the respondents as can be seen are single, additionally married respondents also took the second largest share next to the single ones. This will have a consequence on the contribution in financial, labor, material and knowledge. However, according to the Labor Department's American Time Use Survey, single people have more time for sleeping, personal care and leisure activities than married people. Looking at financial expenses, single people spend more money on clothes and fitness. As a result, most single community prioritize recreation and leisure causing for not participated in voluntary work; social and community activities; and attending meetings. These causes led them to be reluctant in community activities. In general, married people are most likely are responsible in community infrastructural works than single, because most them are participants of social association which makes them to have better information about their local area.

Table 4.3 Education status of respondents

No.	Response	Frequency	Percent
1	Illiterate	11	3.2
2	1-8 grade	111	32.2
4	9-12 grade	116	33.6
5	TVET graduate	30	8.7
6	College Diploma	53	15.4
7	Degree	24	7.0
8	Above Degree	-	-
	Total	345	100.0

Source: Own survey, 2013

Most studies have indicated that the higher the education level results with a higher stock of human capital. But, the above table 4.3 clearly delineates that majority of the respondents have less than higher education. As for instance, the more engineers a district have, leaving other things remaining constant like their willingness and skills they have to participate in CBIDs, the less costs it incur in the designing and other similar costs. Though, this will not directly impact their willingness to participate in CBDs. This addition also can play a major role in the value that adds the knowledge participation to the community based infrastructural development efforts.

The cornerstone of CBID initiative is the active involvement of members of a defined community in at least some aspects of project design and implementation. Although participation can happen at many stages, a key objective is the incorporation of local knowledge into the projects' decision-making process (Ghazala & Vijayendra, 2004). Usually, the projects will be small-scale, low-cost, and use simple technologies. For example, cobblestone paving is a simple and replicable technology though training of workers in chiseling and paving is needed. This might help any community simply operate with low education level. In addition, training provided by the facilitating local NGO will strength the human capital necessary to implement these activities, increases the knowledge and skill base of CBID. One of Millennium Development Goals (MDGs) achievements and strategy is to strength human resource development. To conclude, skilled and well trained labor force may add value to create aware citizen and active participants on meetings and other financial related issues that can potentially drive for CBIDs.

Table 4.4 Current occupation of respondents

No.	Response	Frequency	Percent
1	Student	51	14.8
2	Daily laborer	83	24.1
3	Unemployed	73	21.2
4	Housewife	41	11.9
5	Business owner	97	28.1
	Total	345	100

Source: Own survey, 2013

The above table shows most of the respondents were found to be recruited in business fields and other private companies. Additional to this, the daily laborers and unemployed also took most of the shares in the occupation responses of most respondents. Most respondents set one idea as a general remark; CBDs mainly have a target population and if the target population is not benefited from that, then this could not be counted as a CBD.

Table 4.5 Status of residential land by respondents

No.	Response	Frequency	Percent
1	Owned	61	17.7
2	Rented from people	172	49.9
3	Family house for free	75	21.7
4	Rented Kebele house	32	9.3
5	Rented from housing Authority	5	1.4
	Total	345	100

Source: Own survey, 2013

The above table 4.5 reveals that about half of the total respondents live or work their business in houses rented from people. The major problems faced by many renters from renting houses are increase of rent from time to time, limited duration of the contracts and others. In addition, this is also supported by one question raised for respondents that is, the change in rentable houses after CBD projects are completed. As most of the repliers lives in rental houses the consequence will inversely affect the project. This is because the majority depends on income levels and expenditure patterns of households, their savings capacity and prioritization of housing other than any forms of investment, therefore, the greatest need is for affordable housing. Consequently it limits them to be part of any social associations like Edir which most of the community based development meetings holds. As a result, the influence may prevent them to see developmental activities as their own in controlling, participation and contribution.

When it comes to own house, the occupant possibly will be part of the social capital that builds intimacy with the neighborhoods creating a chance for discussions about the problems that arose in their environment. Accordingly, it might increases responsibility, trust and fillings of ownerships that make easy for collaboration and partnership of projects.

The government estimates that the current housing deficit is between, 900,000 and 1,000,000 units in urban areas, and that only 30 % of the current housing stock is in a fair level, with the remaining 70 per cent in need of full replacement. In Addis Ababa alone, 300,000 units are required to meet the deficit. The housing deficit is set to increase concurrently with the foreseen high population and urbanization growth. There is massive demand for infrastructural services. This demand stems from both the current housing deficit and the poor quality of the existing Kebele housing stock that is beyond repair (UN HABITANT, 2010). As with the housing problem, the need for financial and other involvement for infrastructural projects and basic urban service provision may be below.

Table 4.6 Financial status of respondents

No.	Response	Frequency	Percent
1	Rich	25	7.2
2	Better-off	33	9.6
3	Average	157	45.5
4	Poor	95	27.5
5	Very poor	35	10.1
	Total	345	100.0

Source: Own survey, 2013

Looking at the table, majority of the respondents revealed that their financial status comparing to other members living in their district as averaged. Though, an amount that should not be neglected is that some respondents also indicated that their financial status comparing to others is poor. Moreover, when comparing respondents financial status which are above average and below average, respondents who are below average (poor and very poor) are by far greater than the above ones'. The group had no regular source of funding, and relied on the shadow of some rich member's financial participation.

Alesina and La Ferrara (2000) examine that after controlling for many individual behaviors, participation in social activities is significantly lower in more economically unequal or more fragmented communities. The authors also show that heterogeneity has the most significant impact on participation in groups where excludability is low and significant interaction among members is necessary.

In a similar study, La Ferrara (1999) looks at the role of inequality on group participation using data from rural Tanzania. She also discovers that higher levels of village inequality reduce the probability of participation in any group. In addition, she reports that groups in more unequal communities were less likely to take decisions by vote, and to be less motivated to participate.

Thus, this could create a hindrance in the financial contribution of certain community members. However in the construction of project not only contribution of financial is expected, also there are other types of contribution like serving as a labor, providing material and knowledge.

Table 4.7 Trust level in the community itself * Years of stay in the district

No.		Response	Years of stay grouped						Total	Percent
			1-3 years	4-6 years	7-9 years	10-12 years	13-15 years	More than 15 years		
1	Trust level	Yes	17	30	48	21	16	48	180	52.17
2		No	117	34	12	0	0	2	165	47.82
		Total	134	64	60	21	16	50	345	
		Percent	38.8	18.6	17.4	6.1	4.6	14.5		99.99*

Source: Own survey, 2013

The above table 4.7 discusses about respondents' trust level they have on the community living in their district and the time (years of stay) they have been living or doing their business in the community. As can be seen from the table 4.7 above, most of the respondents responded that they trust the community members in their district. In addition, most respondents were found to stay in the current district within the time ranges of 1 to 3 years. Though the time of stay in the district differs, there was found a pattern in that the more the respondents' years of stay in the district, the more the trust level they will accumulate on the community. This will increase harmonization of community for the mass involvement of CBIDs.

The level of social connectedness and trust in a community can play a positive role or a negative role depending on the coverage of trust and connectedness. Social capital plays an equalizing role if the level of trust and connectedness in a community has a wider coverage and helps information flow among members. However, in the absence of generalized trust, the level of trust and connectedness can have a partial coverage and lead to distributional consequences that are inequitable (Stefaan et.al, n.d). The homogeneity in the community in terms of unity and

cooperation for CBID could play a major role in ensuring trust among the people and promote successful development.

4.2 Level of Local Community Knowledge about CBIDs

This portion of the analysis generally focuses on the awareness and participation of the community on community based infrastructural developments, CBID needs of the community and others.

Table 4.8 Respondents knowledge about CBIDs * Participation in CBIDs

	Response	Participation on CBID		Total	Percent
		Yes	No		
Heard before about CBID	Yes	241	61	302	87.5
	No	15	28	43	12.5
		256	89	345	
	Percent	74.2	25.8		100.00

Source: Own survey, 2013

The majority replied that they have heard before about the community based infrastructural developments and were also major participants of the project in the current district they live or work in, though not all are the participants for different reasons. This shows that most of the respondents are well informed about the community based infrastructural development efforts taken in their district. According to (DBADB, 2013), one of the major goals is to have a better community who will participate in CBID starting from the plan to final implementation. To increase the participation, the government opened a separate body in 2003EC which focuses about awareness creation in door to door for each districts. The elected committees also do the effort in 1 for 5 methods meaning one committee for 5 households. The term community participation is commonly understood as the collective involvement of local people in assessing their needs and organizing strategies to meet those needs (Zakus and Lysack 1998). Community participation, then, is critical to community success (Norman, 2000).

Table 4.9 Respondents type of participation for CBIDs

No.	Participation type 1			Participation type 2			Participation type 3		
	Response	Frequency	Percent	Response	Frequency	Percent	Response	Frequency	Percent
1	Police station	78	22.2	Police station			Police station		
2	Cobble stone works	94	26.7	Cobble stone works	26	7.4	Cobble stones	2	0.6
3	Water pipe	50	14.2	Water pipe	16	4.5	Water pipe	14	4
4	Public toilet	43	12.2	Public toilet	6	1.7	Public toilet		
5	Green development			Green development	1	0.3	Green development		
	Total	265	75.3		49	13.9		16	4.6

Source: Own survey, 2013

In the above table respondents were asked for the types of participation in CBIDs. And most of respondents participate in cobble stone and water pipe more than two times. Participation in police station and green development took the second place that community emphasizes most. It is almost observed that cobble stones are a priority of community in almost in every part of Addis Ababa. This basic infrastructure i.e. cobble stones are believed as a base for other infrastructures like for ease control of police men, for green developments that are planted in parks, squares and streets. Participating in water access is the second priority of community especially in areas where middle and low income people concentrated. As it can be seen from above table community participation in green development is very minimal. This may due to lack of free place for planting and government control of lands for other purposes.

Table 4.10 Reasons for non-participants in CBIDs

No.	Response	Frequency	Percent
1	Number of years lived in the current district	31	9.0
2	Insufficient income to support	34	9.9
3	Insufficient coordination from local authorities	9	2.6
4	Lack of information	8	2.3
5	Lack of Strong Committee to support	7	2.0
6	Lack of the allocation of matching fund from district	-	-
	Total	89	25.8

Source: Own survey, 2013

In the previous table 4.10, 25.8% of the respondents were non-participants in the community based developments. In addition to this, the major reason that was raised by most of the respondents was their income to support the community based developments was insufficient. In addition to that, one further reason that should not be excluded which has also a major impact in the participation of CBIDs by most respondents is the number of years of stay of respondents in the district. The other crucial issue that was raised for CBID participating respondents was the ways that they have participated in the past CBID projects.

Table 4.11 Respondents way of participation for CBIDs

No.	Participation way 1			Participation way 2			Participation way 3		
	Response	Frequency	Percent	Response	Frequency	Percent	Response	Frequency	Percent
1	Raised Money	149	43.2	Raised Money			Raised Money		
2	Knowledge	45	13.0	Knowledge	25	7.2	Knowledge		
3	As a work force	87	25.2	As a work force	4	1.2	As a work force	8	2.3
4	Material Provision	20	5.8	Material Provision			Material Provision		
	Total	301	87.2		29	8.4		8	2.3

Source: Own survey, 2013

Here, respondents were requested to choose more than one choice in that anyone could participate in different ways in CBID projects. Thus, as the merged tables above show, most of the respondents have participated in more than one way, i.e. they have raised money, knowledge, labor and material provision. About 8.4% of the respondents have participated in more than one way and 2.3% of the respondents have participated in more than two ways. According to Addis Ababa Community Based Ownership and Participation Plan 2003E.C, states each community must participate in one of the above mentioned lists in order to help citizens to develop the habit of self-support and to decrease the practice of dependency. Participation is expected to ensure that projects are better designed, benefits better targeted, project inputs brought in a more cost effective and timely manner, and that project benefits are distributed more equitably and with smaller leaks due to corruption and other rent-seeking movement (Ghazala & Vijayendra, 2003).

Once the participatory process is established, the benefits of community based development include increased efficiency and cost effectiveness. Moreover, when the success of projects

depends heavily on changes in behavior at the community level, promoting participation in CBD programs may be the only means of meeting objectives (Deppa, 1995). Three factors influence the prospects for participation. These need, therefore, to be considered prior to implementing a community based approach. These three factors are the nature of the good service, the nature of task and the nature of benefits (ibid).

The other crucial issue is the measures taken on the non-participants in the efforts taken in improving the CBID, where community members could participate in different ways with what they have. The main problem faced is that members in the community who have not participated could not be excluded from the use. This is also provided in the work plan that no one can't be excluded from CBID usage but, didn't put any measures for the non-participants. Thus, the first measure taken by most of the community on the non-participants as responded is advising those (45.2%) on the importance and benefits of CBIDs. The second way of measure is taking the case to the district administration as responded by 9% of the respondents. Fines are also one way of intervention in initiating non-participants in CBIDs. However, some of the respondents (10.1%) rose that there is nothing or no measure that could be taken on the non-participants in CBIDs. Generally, the prevalence of social sanctions is an important factor for the responsibility of each member in the community (Abdul, 2011).

Table 4.12 CBID needs of the community * Comparing CBID to State works

No.		Response	Comparing CBID efficiency to state works			Total	Percent
			Better	Lower	Medium		
1	CBID needs of the community	Yes	114	77	82	273	79.0
2		No	8	50	14	72	21.0
			122	127	96	345	
	Percent		35.3	37.4	27.8		100.0

Source: Own survey, 2013

Most of the respondents responded that the CBID projects that are constructed around their district are basing their needs though the CBID projects are less efficient than state works. The main reason that the majority puts is related with quality and effectiveness of projects. CBOP, (2003E.C) states that community works are part of government effort and can't be separated. With similar points some respondents also mentions that CBID is more efficient than state works.

The idea is supported by (SPL, 2011) and point out, grassroots community infrastructural development facilitation, within the context of people-centered development, is an essential part of human growth, i.e. the development of self-confidence, pride, initiative, responsibility and cooperation among community members. Without such a bottom-up development process among the people themselves efforts to alleviate basic infrastructural poverty and capacitate community-building will be more difficult, if not impossible. Therefore, this social learning process, whereby people learn to take charge of their own lives and solve their own problems, is the essence of empowering and sustainable people-centered development.

4.3 Community Ownership and Projects Continuity

This part of the analysis analyzes on the ownership status of the CBID projects, the satisfaction level and needs of the community on CBIDs and finally responsibility of maintaining damaged CBIDs.

Table 4.13 Harmonization responsibility of CBIDs

No	Response	Frequency	Percent
1	Community itself	206	59.7
2	Community leaders	24	7.0
3	Committee	69	20.0
4	Community state	46	13.3
	Total	345	100.0

Source: Own survey, 2013

The table 4.13 shows that the major responsible body in coordinating CBID projects is the community itself. This is also consistent with the above finding that stated most CBID projects are initially initiated basing on the needs of community. It is also admitted that there is a portion which played by local committees in the process of coordination. Community state i.e. Woreda administer and community state (the sub-city) also took responsibility in organizing community for development when things are beyond the control of local leaders and committees. FAO, (2010) also support that community-based infrastructure programs are multi-sectoral, participatory, and respond to demands and needs identified at the local level that preserve with their own resources.

The advantages of community based developments are information distribution among them that minimizes cost and time, a harmony that is easy to mobilize resources, and they profit from the market value of labor force and other inputs. The prevalence of social sanctions is also an important factor for the responsibility of each member in the community (Abdul, 2011).

Table 4.14 Satisfaction level of the community on CBIDs * Focus needed CBIDs

		Focus needed CBIDs						
	Response	Police station construction	Cobble stone works	Water pipes	Public toilet	Green developmental activities	Total	Percent
Satisfaction level of the community	Very satisfied	10	15	10	11	15	61	17.7
	Satisfied	30	23	18	66	53	190	55.1
	Not satisfied	11	21	11	12	11	66	19.1
	Never satisfied	3	2	9	9	5	27	8.1
Total		54	61	48	99	83	345	
Percent		15.7	17.7	13.9	28.7	24.1		100.00

Source: Own survey, 2013

Majority of the respondents are satisfied with the projects as results from CBID projects that are constructed around their district are basing their needs which are a positive sign. In addition, most respondents indicated that currently public toilet construction is one of the focus needed among the project that are constructed and should be given a high emphasis. Cobble stones and street lights are now everywhere in towns which is becoming as a must than a choice. Street light according to one of Woreda administration mentions, they are necessity for every household for the case of minimization of crime and to ease safeguard of police men in the night.



Figure 4.1 Among the community based cobble stone works in Hayat Tafo

Even though some respondents are very satisfied still with the similar lines most of the community mentioned that, other listed CBID projects are also important in that they also have a small difference with each other. So this reveals that still there is much yet to be done by the community based infrastructural developments.

The study conducted by Abel, (2010) in Bahir dar city also shows that provision of public service; specifically sanitation & urban waste management are challenging the municipality. Public toilets are used by anyone in the city and they aren't free of charges. Users usually pay 0.2 ETB to get the service. In addition, most of the working public toilet have been outsourced to private enterprises and are being run by employed people. From the study we can observe that public toilets are one of the infrastructures that must get attention widely as urban towns are expanding and population numbers are growing and it can also have a potential in creating employment. The project can't construct by the government alone, community also has to take the same move. To enhance community contribution, public toilet is included in "Community Development Agency" under the category of social economic development.

Green development activities are also given high attention by most of the respondents. Forest Research (2010), states green infrastructure refers to the joint structure, position, connectivity and types of green spaces which together enable supply of multiple benefits as goods and services. It also includes thought of community-wide or regional environmental implications of

development as well as site-specific green building concepts (Alex, 1998). The practices similarly produce numerous aesthetic and social benefits, including adding park-like elements to yards and neighborhoods, increasing home for bees, birds and butterflies, calming street traffic and improving public safety offering recreational opportunities and pedestrian access reducing the urban heat island effect. In Ethiopia green developments also in the same way improve the environmental quality, economic opportunity, or aesthetic value related with a city's landscape. The insight that comes to mind regarding urban forest is street trees and decorative woody plants. However this might help for most of the community to have hygienic environment in changing once economically unproductive land to productive like the one Artist Seleshi Demesse (Gashe Abera Mola) did in the past around Piazza. Besides most of the community benefited from parks created as a result of green development giving them an opportunity for many types of business like coffee houses etc.

Table 4.15 Body in charge with the maintenance of damaged CBIDs

No.	Response	Frequency	Percent
1	The community itself	192	55.7
2	The district administration	51	14.8
3	No one	102	29.6
	Total	345	100.0

Source: Own survey, 2013

The responsible body that is in charge of maintaining damaged CBID after their completion as indicated by majority of the respondents is the community itself. One of the targets of community works is creating the fillings of ownership and self-help even when damages occur. Communities are sensitive for their environment. As in the case of cobble stones, in some districts where it is constructed, there is a wood pole as a gate to restrict trucks above 2 tons. This was intended to protect the road from damage they invested in money, material, knowledge and labor. Additional to the community, in some areas the district administration, i.e. elected Woreda committee also plays a major role in maintaining the CBIDs. However, most respondents also indicated that after completion of the CBIDs, if damage occurs there is no one responsible in the maintenance. In this case the infrastructures will discontinue giving services and community will face the problem.

Table 4.16 Election of committees' * Committees see the CBID projects as their own

	Response	How committees' see CBIDs		Total	Percent
		Yes	No		
How committees are chosen	By vote	136	57	193	55.9
	By community associations like 'Edir'	56	30	86	24.9
	By the district administration	6	7	13	3.8
	No one elects them, they start by their own motivation	31	22	53	15.4
	Total	229	116	345	
	Percent	66.4	33.6		100.0

Source: Own survey, 2013

Committees that are representing the community as indicated by most respondents are elected by vote. This shows that most of the participants elect people whom they trust on and have the ability in organizing CBIDs. Deppa, (1995) states that community based development is concerned with the involvement of local stakeholders in decision making. If people in communities are to take initiative, learn, be creative and assume responsibility for their own development, they must be dynamically encouraged to participate.

The other issue is the performance of elected committees, as can be seen in the above table 4.16, majority of the respondents rose that the people or committees who are engaged in different CBID see these activities as their own. Thus, in general the above stated issues have huge influence in the better harmonization and quality of the project.

According to (DBADB, 2013) plan, committees are elected by community which they think they will represent them in changing the environment for bringing a fast and sustainable development. Accordingly, to make the development achievable, community should participate directly through their representatives which is expected to work in responsible and in ownership spirit. Committees are elected from residents of Woreda, from women and youth forums and associations, and from some social associations like Edir and etc.

Building a good community relations with the committees also help the development process in making effective consultation, assuming responsibility and accountability for the CBID programs. Strategies are adopted and identified for operational practices that would promote and encourage community infrastructural development.

But, some respondents (33.6%) indicated that the people or committees that have been elected were not working properly for different reasons. The major reason raised by most respondents (14.7%) from the respondents who believe that the people are not working properly, is that the people in the committee are just there to decrease their all day leisure. The other major reason raised by some respondents (11.6%) is a reduced support from the community which is a necessary condition for the better harmonization of CBID efforts. Finally, 7.2% of the respondents said that the elected committee members have no ability or organization experience.

Table 4.17 Responsible body in resolving CBID conflicts among the community

No	Response	Frequency	Percent
1	Elders	204	59.1
2	Committee	80	23.2
3	District administration	61	17.7
4	Community itself	-	-
	Total	345	100.0

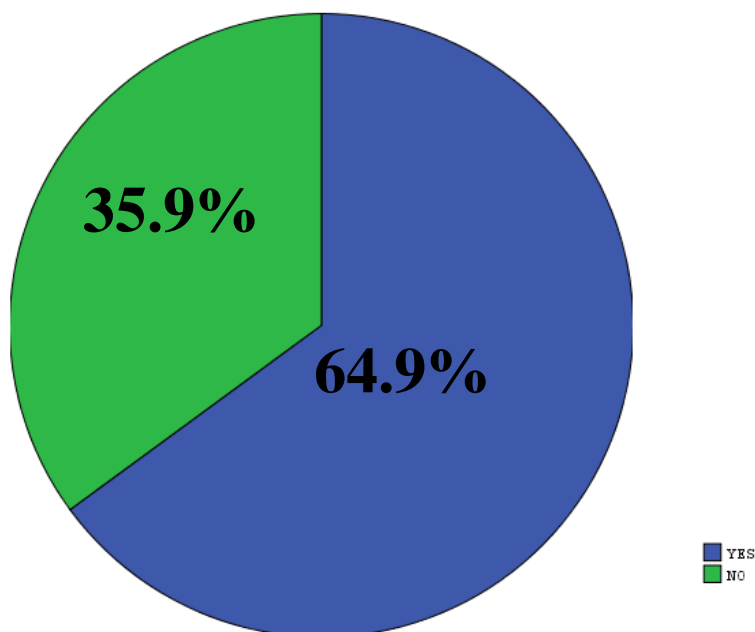
Source: Own survey, 2013

There are different reasons for the rise of conflicts among different members in a community regarding CBID projects. The conflicts sometimes take a form of violence, though they could be handled nonviolently. The choice of infrastructural project that should be given a priority and financial contributions are mostly is the reason for the start of most conflicts. Whenever these conflicts arise, most respondents indicated the elders in the district have the responsibility in resolving conflicts. Even if most of the conflicts are resolved by the elders as indicated by most respondents, the committee and the district administrations also take the responsibility of resolving the conflicts. Here one issue that should be noted is that the elders in the community know well about the members in the community, and thus have the ability in mediating and assuring the continuity of CBID projects peacefully. Moreover, Edir sometimes involves in settling down disputes and conflicts in the neighborhood.

Ethiopians have a rich tradition of organizing to address community problems. This traditional social capital can play a vital role in resource management, resource mobilization, service provision, enhancing popular participation, and information exchange and conflict resolution. Community level decisions are made through group discussion and consensus by assembly (Dejene and Abdurrahman, 2013).

Once the community's problems are identified, they convene meetings that may last two to three days in isolation some places mostly in Edir where they deliberated over them and resolved their problem. But for problems to be resolved, meetings to bear fruit, the role of what may be called opinion leaders and council of elders is crucial. These elders have gained their authoritative influence through wisdom and experience (Birgit, 2001). These studies clearly show that Elders are respected and consulted to solve disputes or conflicts that arise in communities. As one of the Woreda administrators mention in addition to the above reasons, CBIDs conflicts mainly arises during the constructions of cobble stones. According to new plan a width of 5m is needed to construct cobble stone. Consequently, some fences have to be demolished which can lead to dispute. If some conflicts are even tenser, the case will even go further to the higher concerned body. In conclusion, conflict resolutions are important to make ease of developmental works for giving services on the expected time.

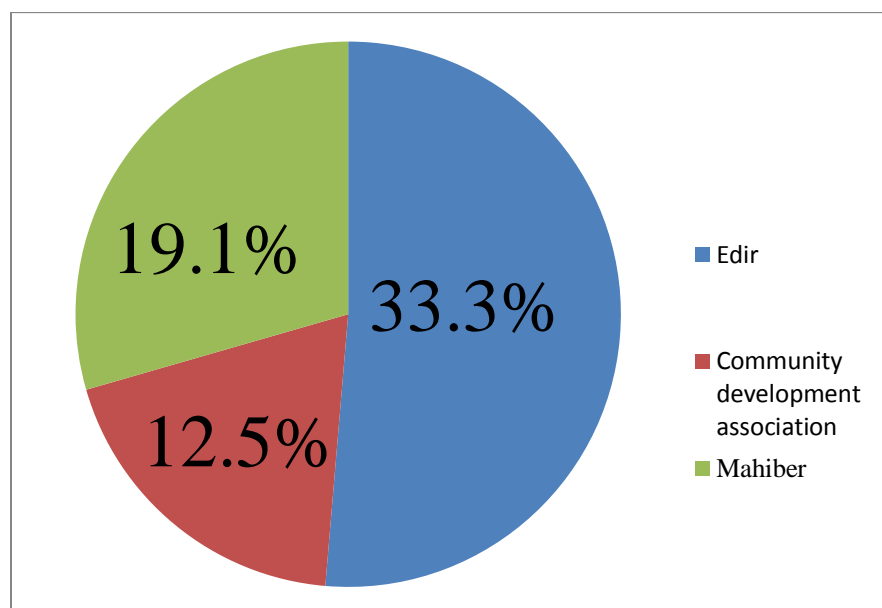
Figure 4.2 Social association membership status



Source: Own survey, 2013

Most of the respondents are a member of social associations. The chief types of social associations in a community include 'Edir', community development associations, Mahiber and others. These associations are generally advantageous in; forming a better bond within the community members, sharing information about the community, in assisting community members facing mainly social problems and others. On the other hand, information mainly basing the community and challenges in the community has a chance to be discussed in the meetings.

Figure 4.3 Type of social association membership



Source: Own survey, 2013

Majority of the respondents are members of social associations and from these most of them are members in Edir associations. Edir associations are social associations which are mostly formed by residences around a village, though they could take some other forms. Additional to this, some respondents also were found to be members in different types of Mahiber and community development associations. As discussed in the previous figure 4.2, most of the social associations are advantageous to the community members in many ways, although more importantly they play a major role in enhancing social interaction and increasing the bond between community members. Furthermore, associations like community development associations also play a major role in assessing and identifying priority for community based development areas of intervention

where community desires improvement. According to one of the Woreda 13 committee mentions, within the first four days of the month, every Edir member contributes money for community infrastructural development services and helping weak members of the society.

There are many types of CBOs in Ethiopia. Some are traditionally established and practiced by the society, (e.g. ‘Yetsiwa mahber’, ‘Ikub’ and ‘Edir’), while others are established based on gender, age and occupations, (e.g. youth associations, women’s associations, farmers’ associations, etc.). However, Edir has significant dominance and influence on the day to day life of the society all over the country. These Edir were established based on two major criteria; working together and living in the same neighborhood. Membership in these Edir is free from ethnic, religious, gender, political or other discriminations (Selamawit, 2006).

They also mobilize the community whenever the needs for community services arise. Despite their existence in formal and informal realms, Edir are used by the government authorities whenever the real collaboration of the community is required. As Edir have such important contributions to the life of the society, almost all Ethiopian household is a member of at least one of such a community based organization, i.e. Edir (ibid). Thus, social associations play a pivotal role in promoting, influencing and enhancing community for common benefits of developments particularly for infrastructures.

The major reason that was raised by (16.2%) of the respondents for their non-membership or termination of their membership in social associations is lack of time. Most of the time, some social associations by their very nature are time consuming where in the above case is the major reason for most respondents’ termination or non-membership in social associations. On the other hand, (6.2%) mentioned that new settlement in an area affected their participation in social associations. Finally, (5.8%) indicated ownership of own premise has also its own impact.

Table 4.18 Regularity of meeting on permanent basis

No.	Response	Frequency	Percent
1	Yes	176	51.0
2	No	169	48.9
	Total	345	99.99*

Source: Own survey, 2013

The majority indicated that they have participated in a regular meeting in their district. Having a regular meeting, helps in creation of ownership filling in which it opens the stage for deep discussion with the Woreda and higher administration of sub city's giving an opportunity to see what the community interest, challenges and the solving mechanisms concerning of CBID. Furthermore the meetings have an advantage in knowledge and experience sharing. The aims of the meeting are to activate residents to be more involved in Woreda activities, specifically in their district. Checklist of activities to be addressed is taken during the meeting in order to ensure a successful public meeting in which communities feel free to participate in discussions.

Since meetings allow a sharing of thoughts and experiences, individuals eventually realize that they will find some things collective to all of them. This paves way for a more comfortable atmosphere within the group which, in turn, makes it easier for the attendees to freely express themselves without worries of getting criticized and ignored. And when people are comfortable with each, it also develops easy to crack humor. A good humor during meetings can work as an “ice breaker” from a serious atmosphere and it also saves the cordial relationship among participants (Exforsys, 2009).

The infrastructure development project, which was started in the budget year of 2003E.C, is now worked strongly in creating social movement, which is taken consolidates social awareness, through facilitating stages. In doing so, it was possible to create awareness on infrastructure and security issues for 11,200 households from all developmental sectors (YSC, 2004E.C). In regard to the above results there are also many community members that didn't participate in meetings. As one of the Woreda administer said, many people and concerned government bodies absent during the meetings which will impede the CBID efforts.

Table 4.19 Frequency of meetings * Promotion of CBID on meeting

		Frequency of meetings			Total	Percent
	Response	Always	Rarely	Sometimes		
Promotion of CBIDs on meetings	Yes	81	41	177	299	86.7
	No	16	19	11	46	13.3
	Total	97	60	188	345	
	Percent	28.1	17.4	54.5		100

Source: Own survey, 2013

As indicated in the above table most of the community participants believe CBIDs meetings have an impact in the promotion and harmonization of infrastructural development efforts. Meetings also have part in high lighting the interests through the practice sharing and in coordinating and initiating for work. Furthermore, meetings can serve as a media in promoting employment. As can be seen in the above table, most of the respondents participate in meetings and other social activities when woreda or districts announce in case of needed. In addition to that, there are some communities that participate in meetings continually that might prove the project permanence and project sustainability.

Table 4.20 Contact with other district

No.	Response	Frequency	Percent
1	Always as needed	53	15.4
2	Rarely	10	2.9
3	Sometimes	157	45.5
4	Never	125	36.2
	Total	345	100.0

Source: Own survey, 2013

As it can be seen, most of the community repliers have contact with other district sometimes. This will increase positive competition among districts to inspire for the infrastructural developments, helping them to see their current level of state compared with other districts. Additionally, most community will emanate interest and leads to participate in what must be done, what type of infrastructure should be constructed comparing their district with others. With less number repliers again had no contact with other districts that might be as a result of lack of time, farness of the districts and etc.

Table 4.21 Start-up support for the project

No.	Response	Frequency	Percent
1	Yes	96	27.8
2	No	249	72.2
	Total	345	100.0

Source: Own survey, 2013

Not getting any start up supports from the district offices may delay speed of service giving. According to (DBADB, 2013) plan government allocation fund of 35% is given in forms of

material, machinery and labor cost payment. This resource is mainly given in the beginning and middle of constructions of the projects and it is not more than one million birr. The main resource i.e. 65% is expected from the community itself.

Among the respondents who replied reasons for not getting start up supports, (35.1 %) answered that lack of ability or willingness from the district offices is the main reason. The second (18.66%) responses clear financial feasible statements from committees are other reasons. Since public money is sensitive, the money collected from the community should be put in A-account where the concerned and elected persons will take in the time of needed. And clear financial statement is needed to ask government a matching fund for the projects.

Table 4.22 Follow up support for the project

No.	Response	Frequency	Percent
1	Yes	124	35.9
2	No	221	64.1
	Total	345	100.0

Source: Own survey, 2013

Follow up support is one role of the government control for the activities held by community. According to (DBADB, 2013) plan there are a conditions were follow up and start up support is not given. The first one is when the project has a reputation in the same area and results for resource wastage, Second is in case of community lack to participate in financial and expects fully from the government, the third thing is when the projects conducts for private business, religion and politics purpose. Finally, follow up and start up support not given when the allocation (matching funds) used for office rent, for vacation and for other luxury purposes. But there are many projects that the government gives support mentioned in DBADB plan when the projects are found to have a public usage and prioritized by the majority of the community.

As in the above mentioned, the majority mentioned they didn't get any follow ups. But these supports are necessary for the project existence and continuity which checks the community involvement and will make proper policy for future implementation.

4.4 Infrastructure Needed for Local Economic Development

This part of the analysis analyzes on types of infrastructure that promote local economic development in terms of employment creation, income generation, and better access of the services of the CBID projects.

Table 4.23 Status of Income before and after CBID projects

Before				After			
	Total	Mean	Std. Deviation		Total	Mean	Std. Deviation
Income before CBID projects	43	1620.93	848.544	Income after CBID projects	43	2471.59	1141.877

Source: Own survey, 2013

The above mean result shows, income of business owners has changed considerably after the completion of projects. Even though, this question is particularly prepared for business proprietors; there were only 43 respondents who were willing to answer. Before the project the minimum income for business owners, in terms of birr was 300 and after the project the least was 600. Yet again the maximum birr before the project constructed was 3000 and this increases to 5000 birr following the project. Even there may exists other variables for the increase of income, it is agreed that infrastructures are a basic and vital for the development of economy. For example, if the place of business area isn't clean and hard for customers to reach there it will definitely affect the whole process of business no matter what inputs he may use from other things. Among types of infrastructures that give a height are roads, green parks, security and the water access. The result shows that CBID projects are increasing the income for many business owners and it is also adding a value for governments in terms of tax.

Table 4.24 Status of rentable houses after completion of CBD project

No	Response	Frequency	Percent
1	Increased	271	78.6
2	No change	67	19.4
3	Decreased	7	2.0
	Total	345	100.0

Source: Own survey, 2013

Concomitantly, most respondents rose that rent of houses has increased after most CBID projects are completed in their district. The result shows that most rentable houses are increasing from time to time though, it is generating income for renters the counterpart will be affected. This on the other hand has its own impact in the development efforts of CBIDs. That is the more the community members in rentable houses and residences the less their contribution will be to community based developments. As stated before, the main reasons for their less contribution to CBIDs are the high costs incurred for renting the houses, the low tendency of renewing the contracts with similar rents in the previous contracts which leads them in search of other houses in the same or new districts and others. But renting housing is now becoming the generator of income for both the owners and the government. That is why it is provided under the plan of DBADB that collecting of house rent is part of the developmental activities in line with infrastructures.

Table 4.25 Benefits of CBIDs

No.	Response	Frequency	Percent
1	Security	92	26.7
2	Transport	83	24.1
3	Water access	28	8.1
4	Recreation center	17	4.9
5	Beautification and sanitation	125	36.2
	Total	345	100.0

Source: Own survey, 2013

Community based development continues its efforts to improve the living conditions of residents through infrastructure improvements transport services, security activities, and in enhancing economic development. The primary purpose of the CBIDs program as most of the respondents answered is to provide services that principally benefit citizens and to develop viable urban centers, in changing the slum into clean areas. Succeeding the road access, security and green developmental works, it has led for community to have a better environment.

Table 4.26 Status of security after CBID

No.	Response	Frequency	Percent
1	Improve	178	51.6
2	Same	110	31.9
3	Get worst	57	16.5
	Total	345	100.0

Source: Own survey, 2013

Generally, it can be clearly observed from the above data, the majority of community mentioned there is improvement of security after the project. This security comes from the construction of police station in each residential area that even further crates a job opportunity for many police men.

The community based infrastructural projects concerning to security programs play an important role in providing some services to volatile and vulnerable communities where the state is not significantly present. However, they are not a long term answer to problems of service delivery. Lack of strengthening and improved community policing may have the greatest impact on crime and violence makes the service unchanged.



Figure 4.4 Among the community based police station in Meserak Luke

As many studies show that community based security projects designed to minimize the potential for conflict, and is believed that safety and respect for human rights should be compatible, if

secure through partnerships involving local communities, the police and other stakeholders. According to George (2011) community security is defined to establish communities feel secure from threats exerted by violent conflict, arms proliferation, crime, and a lack of protection or direct threat by the state, and a process in which communities participate in identifying and prioritizing their security needs as well as appropriate responses to meet these needs.

In Jamaica community security projects is the project that is prioritized. Crime and violence are major barriers to development in Jamaica. Due to this, the government supported by international development partners, has initiated a range of programs to increase the safety and security of local communities (ibid). Therefore those projects have a positive effect in providing peace and security in the daily life of activities.

Table 4.27 Status of water supply after CBIDs

No.	Response	Frequency	Percent
1	Improve	115	33.3
2	Same	134	38.8
3	Get worst	96	27.8
	Total	345	100.0

Source: Own survey, 2013

Looking at the table above, most of the respondents were agreed that status of water supply after the projects is the same. Many studies indicate that access of clean water is the single most important issues facing community and most vital resource that provide to ensure them a better quality. Major challenge for community to water project services is the increasing of population, farness of availability of water and the time for waiting to fetch.

Access to water supply and sanitation in Ethiopia is amongst the lowest in Sub-Saharan Africa. In Ethiopia only 42% of the population has access to an improved water supply, and only 11% of the population has access to adequate sanitation services. In rural areas, these numbers drop even further. While access has increased substantially with funding from external aid, but much still remains to be done to achieve the Millennium Development Goal of having the share of people without access to water and sanitation by 2015, to advance sustainability and to improve service quality (EWS, 2012).

However, the government's budgetary allocation to the water sector has been decreasing over the years, declining almost by half from 4% in 2006 to 2.5% percent in 2010, according to international NGO Water Aid. The budget is calculated based on the current and future cost investment and requires a secured financial means, said an official of the Ministry of Water and Sanitation. The ministry is now working on issues related to sustainability of the systems set up with communities, adding that this would cut down on the costs of repairing systems. As a result communities also contribute to water access.



Figure 4.5 Among community based water supply in Fanuel

The experience of Laung Prabang Province shows, community-based water supply project has been extremely successful in Xieng Ngeun town, both in its performance and outcome and has had significant impacts in the lives of those households. Community members and heads believe this allowed for a more equitable project in which all households could benefit from water and sanitation. After project interventions, 81.7% of households in the targeted district of Xieng Ngeun town are now connected to the water supply network and receive safe, piped water direct to their houses. The government would provide technical knowledge and machinery, but the community would contribute their money, labor by helping dig trenches, and the district authority would also help in providing assistance to the project through labor (Sarah, 2008).

Table 4.28 Change in economic activities after CBID

No.	Response	Frequency	Percent
1	Significantly improved	52	15.1
2	Improved	162	47.0
3	Same	91	26.4
4	Get worst	36	10.4
5	It was destroyed	4	1.2
	Total	345	100.0

Source: Own survey, 2013

Well-designed infrastructure programs provide a useful entry point and catalyst for development, as they strengthen community organizations and participation, empower women, develop skills, and stimulate small enterprises. Community based infrastructure programs investments also increase individual performance and productivity, generate higher incomes, stimulate economic growth, and can contribute to environmental sustainability (ILO, 2010).

Moreover, an economic activity has improved next to the project. This helps many communities to own business like shops and coffeehouses. The change comes after healthy environment, access of roads, security, water access and etc. In addition to that the CBIDs creates a job for many police men, for those who control and maintain stand pipe water provision, for labors of cobble stone and green developmental projects.

The expansion of business activity operating within a community is the most effective way to encourage local economic growth. The first and perhaps the most important step is to look within the community to see how existing and prospective efforts can be supported by local interested parties local government, citizens, NGOs and businesses. The CBID project is thus advantages community in that it emphasizes the need to coordinate the efforts of all groups within the community and to influence their resources whenever the opportunity to do so arises.

Since the 1970s, the UN has been promoting a developmental approach that seeks optimal employment creation in regular infrastructure investments for sustainable growth and poverty mitigation, without compromising the quality or costs of the works. This idea is supported by the theory of Seers (1972); development is creating conditions for the realization of human character,

reduction of poverty, social inequalities and improvement in creating employment opportunities. And Zdeck (1994) narrows down the term economic development to economic and community development, which according to him are not distinct agendas. Economic development is a process and approach used to create assets, jobs, and an investment climate in distressed neighborhoods and cannot be separated from community development. Economic development impacts and is impacted by key social and political factors in a community ranging from accessing basic infrastructural development services.

Table 4.29 Employment status in CBIDs

No.	Response	Frequency	Percent
1	Yes	123	35.7
2	No	222	64.3
	Total	345	100.0

Source: Own survey, 2013

Table 4.29 illustrates that 64.3% of the community responded that they have no a family member who is employed in the project which is sponsored by community based development. Thus the study reveals that even though there is an overall change in economic activities, it has not coped up with the employment creation within the project. The reasons are dwellers of around Addis Ababa are taking the job in the break of harvesting than the residents of districts and another possible reason might be most youth has a culture of underestimating jobs.

Community based development projects are critical resources for employment opportunities that reflect the individuals' preference, skills and abilities. Most of projects are labor-intensive; they use natural and locally available resources boosting the local economy in channeling investment to local people and businesses.

Findings of GTZ (2009), states that employment in the CBIDs project opens to all, including the disabled, and focuses largely on unemployed young people and women. Thousands of people have already found work in Ethiopia's growing cobblestone construction sector, allowing them to improve their lives and provide for their families. However, chiseling is not an easy job and mastering the art is even more difficult. That's why local TVET colleges offer trainings in projects trades

4.5 Challenges of CBID towards their Contributions for LED

This part of the analysis explores on the in internal and external challenges that faces community for infrastructural development activities that would local economic development.

Table 4.30 Internal challenges

	1 st problem		2 st problem		3 st problem	
Variable	No.	%	No.	%	No.	%
Undedicated committee	88	25.66	49	14.29	38	11.08
Problem of stable administration	44	12.83	62	18.08	21	5.54
Financial constraint	74	21.57	50	14.58	19	5.54
Consultancy and training	49	14.29	40	11.66	49	14.29
Offering of material	18	4.66	46	13.41	54	15.74
Improper utilization of resource	20	5.83	42	12.24	46	13.41
Auditing problem	30	8.75	23	6.12	29	8.45
Nature of dependency	22	6.41	33	9.62	89	25.95
Total	345	100	345	100	345	100

Source: Own survey, 2013

One of the major problems for community participation in the projects is related with the committees. Committees are elected by community but most of the problem arises due to delaying of committees to report to Woreda for the necessary fund allocation. And most of the Woreda employee who involve in CBD projects willn't stays in office more than a month. This will affect the project negatively because most new employee needs few weeks to adapt the environment and consequently the project may delay. Another major problem is the expectation of government for any type of infrastructures i.e. dependency.

Table 4.31 External challenges

	1 st problem		2 st problem		3 st problem	
Variable	No.	%	No.	%	No.	%
Un-coordinating other gov't office	218	63.56	31	9.04	32	9.33
Delay of plan & implementation	52	15.16	94	27.41	48	13.99
Level of trust	28	8.16	88	25.66	32	9.33
Delay of matching fund	17	4.96	98	28.57	69	20.12
Lack of participation	28	8.16	32	9.33	150	43.73
Bidding problem	2	0	2	0	14	3.5
Total	345	100	345	100	345	100

Source: Own survey, 2013

Generally speaking, the external problems in the above by most respondents show that, un-coordinating of other government office like TELE, ELPA, water lines are the reasons for most projects to be delay and not give service on time. These is due to when cobble stone and other infrastructures are constructed this government offices have to cooperate and have to stand next to community efforts but, in most of a time there is a problem within this organizations. The delay of matching fund also mentioned as a second major problem, but as one committee said since many projects are constructed especially cobble stone, government matching fund might be delay and give first chance for those who organizes first. Finally most of the respondents agree on problem of participation as a third and major problem.

4.6 Impact Assessment with Strong CBIDs and with Less CBIDs.

4.6.1 Determinants of Community Strength on CBID and Average Treatment Effect on Treated (ATT)

The first model fitted is Heckman two stages taking the variables which are ordered than continuous, as continuous to get approximate result. Table 4.31 show that all models are collectively significant as the Wald chi square is significant at 1% level.

Table 4.32 Statistics for Heckman 2 stage OLS

Model	House rent on location	Level of peace and security	Access to clean water	Level of economic activity in the area	Employment benefit
Obs	343	343	343	343	343
Wald chi2	66.68	86.55	55.61	69.44	64.58
Prob	0	0	0.0001	0	0.0004
Df	14	14	22	22	31

Based on this model community with strong CBID projects are having low relative decline in house rent but it is significant only at 5% but not at 1%. Moreover, the existence of self-selection to treatment is significant at 5% but not at 1%. In other models the existence of self-selection is questionable as the Treatment (lambda) is significant. Moreover, strong communities lead to significant (at 1%) relative decline in both employment benefit and level of economic activity. However there is no significant effect at both level of peace and security and access to safe drinking water.

Table 4.33 Simple Heckman two stage model with OLS impact variable

Variable	House rent on location		Level of peace and security		Access to clean water		Level of economic activity in the area		Employment benefit	
	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.
Best	0.508*	0.238	-0.452	0.337	0.095	0.385	1.567**	0.537	0.865**	0.327
better off	-0.543**	0.143	0.934**	0.202	0.139	0.218	-0.956**	0.32	-0.283	0.174
Average	-0.642**	0.11	-0.25	0.155	-0.192	0.167	-1.154**	0.246	-0.152	0.134
Poor	-0.772**	0.122	0.108	0.173	-0.07	0.189	-0.86**	0.275	-0.178	0.152
very poor	-0.616**	0.134	-0.028	0.19	0.197	0.216	-0.935**	0.296	-0.39*	0.175
Trust	-0.005	0.005	0	0.007						
Number of years lived	-0.199**	0.068	0.064	0.096						
Rented	0.134*	0.061	0.275**	0.086	0.042	0.09				
Business	0.001	0.065	-0.077	0.092			-0.51**	0.149		
Gender					-0.02	0.12			0.086	0.094
Age					0.021**	0.005	0.008	0.006	-0.004	0.004
Daily laborer					0.094	0.149			-0.129	0.122
Unemployed					-0.238	0.166			0	0.139
House wife					-0.207	0.205			0.328*	0.165
Business owner					-0.199	0.16			0.001	0.132

1-8 grade							-0.869*	0.358	-0.414*	0.203
9-12 grade							-0.983**	0.351	-0.41*	0.201
Technical education							-0.447	0.396	-0.475*	0.224
Diploma							-0.988**	0.368	-0.447*	0.213
Degree and above							-0.678	0.402	-0.053	0.232
Treatment	-0.329*	0.148	0.252	0.211	-0.044	0.24	-0.955	0.332	-0.517	0.201
Cons.	1.923**	0.17	1.607**	0.241	1.475**	0.347	3.467**	0.49	1.869**	0.375

Note ** 1% significance and * 5% significance

If these results are to be trusted having strongest community seems to lead to negative outcome in terms of change in house value, economic activity and access to employment. However, since OLS assumes these ordered variables are continuous we should check then none linear approximation in form of ordered probit. Since our objective is not to analyze perception there is no need to explain other variables.

Table 4.34 Statistics for Heckman 2 stage based on ordered probit

Model	House rent on location	Level of peace and security	Access to clean water	Level of economic activity in the area	Employment benefit
Number of obs	343	343	343	343	343
LR chi2	57.4	73.23	38.17	84.2	74.2
Df	10	10	13	13	17
Prob	0	0	0	0	0
Pseudo R2	0.1421	0.1063	0.051	0.096	0.1662
Log likelihood	-173.327	-307.737	-354.881	-396.572	-186.157

Another approximation is Heckman two stage using ordered probit in second stage, this will model the outcome variable as ordered but still is approximation given the treatment (lambda) variable is not estimated for such none linear equation but only for linear equation like OLS. As can be seen from table 4.34 above, the variation in the outcome variable is well explained by explanatory variables as chi square values are significant at 1%.

Table 4.35 Simple Heckman two stage model with ordered probit impact variable

Variable	House rent on location		Level of peace and security		Access to clean water		Level of economic activity in the area		Employment benefit	
	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.
Best	1.801**	0.692	-0.905**	0.614	0.193	0.592	2.249**	0.559	2.794**	0.841
Better off	-1.286**	0.374	1.494**	0.346	0.237	0.346	-1.233**	0.325	-0.977*	0.448
Average	-1.5**	0.283	-0.483**	0.26	-0.277	0.26	-1.518**	0.254	-0.513	0.348
Poor	-2.021**	0.334	0.17**	0.29	-0.111	0.291	-1.117**	0.28	-0.604	0.388
very poor	-1.394**	0.355	0.005**	0.31	0.309	0.333	-1.229**	0.301	-1.214**	0.437
Trust	-0.007	0.015	0	0.013						
Number of years lived	-0.6**	0.193	0.123**	0.164						
Rented	0.49**	0.189	0.511**	0.148	0.05	0.136				
Business	-0.029	0.202	-0.114	0.159			-0.715**	0.155		
Gender					-0.018	0.179			0.225	0.217
Age					0.032**	0.008	0.009	0.006	-0.009	0.01
Daily laborer					0.139	0.229			-0.411	0.284
Unemployed					-0.344	0.256			-0.074	0.336
House wife					-0.323	0.313			1.273**	0.453
Business owner					-0.303	0.246			-0.037	0.32
1-8 grade							-1.074**	0.362	-1.185*	0.479
9-12 grade							-1.266**	0.355	-1.143*	0.476
Technical education							-0.507	0.397	-1.331*	0.527
Diploma							-1.293**	0.372	-1.174*	0.511
Degree and above							-0.836*	0.405	0.26	0.605
Treatment	-1.14**	0.433	0.514**	0.383	-0.095	0.37	-1.378**	0.35	-1.677**	0.524
Cut1	-0.628	0.455	0.514	0.383	0.308	0.527	-2.583	0.508	-1.016	0.873
Cut2	0.921	0.46	0.065	0.414	1.39	0.529	-1.044	0.5		
Cut3							-0.001	0.498		
Cut4							1.232	0.511		

Note ** 1% significance and * 5% significance

In this model selection effect is observed in all but access to safe clean water model at 1% significant. Moreover, living strong community is observed to increase level of safety and security but it has negative effect on access to employment, economic activity and house rent. So having strong community participation does not generate benefit, in form of increased economic

activity, increased employment or increased in house value, as the benefit happens mostly in weak communities. But we know all the above results are approximate so let's proceed to endogenous switching model which is better fit and can do the estimation in one stage, as given below.

Table 4.36 Statistics for endogenous switching model with ordered probit impact variable one stage estimation

Model	House rent on location	Level of peace and security	Access to clean water	Level of economic activity in the area	Employment benefit
Number of obs	345	343	343	343	343
LR chi2	6969.52	110.69	93948.25	9409.41	2506.57
Df	38	38	41	41	45
Prob	0	0	0	0	0
Log likelihood	-374.587	-495.394	-567.634	-566.589	-386.622

As can be seen in table 4.36 above, all variables are significant in the 5 models. Focusing on the result given in table 4.37 below, living in best community is observed to increase to safe drinking water and level of peace and security as measured by differential satisfaction of the resident before and after CBID. However, living in best community with strong CBID is observed to have relativity negative effect on house rent (measure of house value), level of economic activity and employment benefit. Means the benefit of the CBID on those dimensions mainly happened to those with strong community than those with weak community.

Table 4.37 ML Endogenous switching model with ordered probit impact variable one stage estimation

Variable	House rent on location		Level of peace and security		Access to clean water		Level of economic activity in the area		Employment benefit	
	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.	Coeff.	St. Er.
Best	1.046**	0.063	-0.994**	0.1469	-1.086**	0.006	1.128**	0.032	1.115**	0.036
better off	-0.753	2.351	1.47	1.065	0.558**	0.003	-1.267**	0.253	-0.123*	0.063
Average	-0.729**	0.157	-0.189	0.6045	-0.461**	0.088	-1.643**	0.068	-0.277**	0.069
Poor	-1.247**	0.076	0.248	0.6254	0.178*	0.088	-0.944**	0.102	-0.066	0.066
very poor	-0.758**	0.046	-0.007	0.9044	0.452**	0.088	-1.362**	0.147	-0.866**	0.073
Trust	-0.0004	0.019	-0.005	0.0348						
Number of years lived	-0.383**	0.091	0.044	0.414						
Rented	0.215**	0.013	0.267	0.3889	0.02**	0.005				

Business	-0.071**	0.004	-0.011	0.1795			-0.631**	0.037		
Gender					-0.369**	0.008			0.213**	0.026
Age					0.044**	0	0.008**	0.002	-0.014**	0.001
Daily laborer					0.187*	0.086			-0.141**	0.044
Unemployed					-0.479**	0.086			0.126**	0.044
House wife					-0.061	0.086			1.248**	0.041
Business owner					-0.327**	0.085			0.179**	0.034
1-8 grade							-1.189**	0.128	-1.057**	0.054
9-12 grade							-1.334**	0.32	-1.132**	0.044
Technical education							-0.607**	0.066	-1.263**	0.069
Diploma							-1.463**	0.356	-1.15**	0.057
Degree and above							-0.965**	0.32	0.432**	0.12
Cut1	-0.312**	0.039	0.081	0.5588	0.147	0.109	-2.933**	0.317	-1.147**	0.038
Cut2	0.899**	0.054	0.707	0.5531	0.893**	0.109	-1.604**	0.327		
Cut3							-0.751*	0.335		
Cut4										
Rho (σ_{ue}^2)	-0.707**	6.19E-8	0.707**	0.0001	0.707**	7.14E-9	-0.707**	1.77E-7	-0.707**	1.78E-5

Note ** 1% significance and * 5% significance

If we observe rho which measures the correlation between the selection to treatment equation and the impact assessment equation there is high correlation, which is significant at 1%, showing that our model is better than simple ordered probit which assumes random error terms. If we focus on the rho of employment, house rent and economic activity, it has negative coefficient showing that those who are concerned about house rent, economic activity and employment changes and are more unhappy about their change more than other are those who does not make their community the strongest. Means, those who make their community less strong are expecting more in those dimensions as result even though they are doing better in those dimensions they are unhappy than others which are doing less but expect less. This indicates the fact that not being random creates problem, if we simply compare them we could conclude those happy are doing better and those unhappy are doing bad, but that is true if expectation was randomly distributed to treatment and control which is not the case. It is to be recalled that, those expectations are more of poor people expectation of rich people expectation, which can tell us weak community, in the eye of state, may be simply poor community.

But the rho on others is positive showing those who make their community strong or select to join strong community are those concerned about safe drinking water and peace and security. So the allocation is not random and as result those strong community are doing better on those areas they are more concerned like safe drinking water and peace and security, which are highly related to wealth but the poor communities are doing better in areas where they are more concerned. This could show us government identification of effectiveness is highly related to wealth of the community than real effectiveness but also it also tells us that those communities tend to focus on the main concern of the location and seem to be fairly independent from state intervention. Now let's check the matching (PSM) outcome.

Table 4.38 PSM result

Outcome variable	Stratified PSM				
	No. Treatment	No. control	ATT	Std. Err.	T
House rent on location	132	190	-0.017	0.059	-0.294
Level of peace and security	132	190	-0.05	0.096	-0.52
Access to clean water	132	190	0.015	0.098	0.154
Level of economic activity in the area	132	190	0.054	0.099	0.542
Employment benefit	132	190	-0.02	0.052	-0.386
	Nearest neighborhood (random) PSM				
House rent on location	132	143	-0.076	0.063	-1.21
Level of peace and security	132	143	0	0.106	0
Access to clean water	132	143	0.091	0.109	0.833
Level of economic activity in the area	132	143	0.03	0.124	0.245
Employment benefit	132	143	-0.076	0.063	-1.201
	Kernel PSM				
House rent on location	132	213	-0.039	0.053	-0.731
Level of peace and security	132	213	-0.047	0.102	-0.462
Access to clean water	132	213	0.02	0.072	0.272
Level of economic activity in the area	132	2013	0.025	0.101	0.25
Employment benefit	132	213	0.003	0.043	0.059
	Radial PSM				
House rent on location	127	194	-0.011	0.055	-0.195
Level of peace and security ¹					
Access to clean water					
Level of economic activity in the area					
Employment benefit					

If we focus on level of house value as represented by house rent value, have strong community has positive effect if we use any of PSM matches but none of them are significant. In terms of peace and security there is positive effect when stratified bands and kernel bands are used but they are not significant. When other bands are used the effect is negative but not significant either. Moreover there is no significant effect in either economic activity or access to safe drinking water though have strong community seems to have negative effect in both. In terms of employment benefit communities with strong community seem to create more employment when stratified and nearest neighborhood are used and have negative effect when radial and kernel width are used but none of them are significant. So in simple words the strength of community does not seem to have any differential impact and the impacts observed are not robust to the matching method selected.

However the above result fails from some problems. First it ignores self-selection which is more probable to exist as we see it in the above models. Moreover it ignores other perception effecting variables which are found to be significant and takes the outcome variables as observed, though they are not. That is why the result of endogenous switching model is more acceptable than others.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

This chapter presents conclusion and recommendations based on the findings of the previous chapter. Accordingly the overall analysis is summarized briefly and possible recommendations are also forwarded by the researcher.

5.1 Summary and Conclusions

CBD investment enables higher delivery and maintenance rates of basic infrastructure assets and services that are essential for the socio-economic development. This investment stimulates local entrepreneurship, community participation and local economic development. With this in mind, this paper was started having objective from which the main research question was drawn that is exploring to what extent the contribution of the CBID adds to LED by taking three local districts; Meserak Luke, Hayat Tafo and Fanuel in Yeka sub city as a case study area.

Furthermore, the study focused on CBID with about 345 samples of respondents that have been covered by the study. Analysis was done using descriptive statistics by applying tools such as frequency distribution, percentages, means, and averages, as well an endogenous switching model regression analysis was made to see the impact of CBID of high, low and medium districts and to identify the impact on house rent, level of peace and security, access to clean water, level of economic activity, and employment benefits respectively.

The descriptive statistics indicated that most of the community was found to be in the working age group and most participants are found to be male. They also have less than higher education level. Most of the respondents of the study live or work their business in houses rented. In addition, most respondents were found stayed in the current district less than 3 years. Thus, immaturity in education levels and living in rental premise could make an impediment in the efforts made by the CBIDs to contribute to LED.

Most of the community are aware of CBID projects and participated in raising money, working as a labor force and contributed in knowledge. Furthermore, measure taken by most of the community on those non-participants is advising on the importance and benefits of CBIDs. The study also reveals that projects which are constructed around their district are basing their needs

although it is less efficient than state works. Thus, this will create an obstacle on the efficiency and effectiveness of projects.

In the study, majority of communities are participant of social association and the chief types of social associations in a community were 'Edir'. It also reveals that within the first four days of the month, every Edir member contributes money for community based infrastructural development services and helps weak members of the society. Most of communities have participated in a regular meeting in their district which helps in the promotion of CBIDs. Also the study found that the most projects have not received any start up and follow up support from the government. As the majority mentioned, lack of ability or willingness from the district offices and unclear financial statements from committees are the major reason. As a result, not getting any start up and follow up supports from the district offices may hinder speed of developmental activities.

CBD continues its efforts to improve the living conditions of residents through infrastructure improvements in beautification and sanitation, in security and transportation. In addition, the study found out that most of the house rent and status of security of house has increased after CBID projects are completed in district. Though, economic activities after CBID project has increased, members of the community didn't get the job created within the projects in their district which is a major predicament in increasing the employment creation.

The econometric results show that strong community is observed to increase to safe drinking water and level of peace and security. However, involving in strong CBID is observed to have relatively negative effect on house rent (measure of house value), level of economic activity and employment benefit. The benefit of the CBID on those dimensions mainly happened to those with less CBID community. Poor locations tend to be less probable to be identified as strong community by state though the people are less satisfied by the outcome. Communities are working mostly in areas where the people are more concerned and as a result, state intervention does not seem to be very serious in diverting the CBID efforts from the main concern of the people.

The study also indicated that community perceives undedicated committee as a major internal problem and un-coordinating other gov't office and delay of matching fund as external factor. In

addition, it was also noted that lack of participation and dependency nature of the community in the study area are also major external and internal problems respectively. Thus, to conclude solving those challenges could enhance the contribution of CBID and boosts their contribution to LED.

5.2 Recommendations

The findings of this study have important implications for interventions designed to enhance the expansion of CBID in Yeka sub city and in other similar cities in Ethiopia.

The participation of women in the project compared to male is low. Accordingly, special stages that could encourage women full participation in raising issues in the design; implementation and management that can add and contribute to LED must be established by Government or NGOs. The stages can be taken in Women forum and associations.

Even though most of the projects are small-scale, low-cost, and use simple technologies, training of workers are needed for community simply activate with low education level and respected by society in the case of harmonization of meetings. In addition local Woreda should have to facilitate high quality of training especially for youth and female which must be available in each district at all levels and in different ways to suit the needs of new and experienced practitioners, and talented new entrants to be recruited. This will increase skilled and well trained labor force that may add value to create aware citizen and active participants of community meetings and other financial related issues that drive encouragement for CBIDs.

A steering committee needs to be established to check the quality of the CBID projects to be more efficient as a state works. Thus, to improve the service quality and effectiveness the city administration need have to create significant competitions within districts. The winner district must be given financial award to enhance project development. CBID should be managed and delivered to the highest standards.

As the findings of the study indicated that start up and follow up support have been found to be highly significant factor in contributing high CBID. Accordingly, CBID funding should be adequate to achieve and maintain a major step in changing the level of community strengths and empowerment across the nation and especially in disadvantaged areas. This fund can be in the

form of machinery and raw materials because provisions of resources are the reasons for most projects to be delay. Thus, the local administration needs to provide integrated supports to the community during the project start and mostly during implementation in order to enhance their capacity and sustainability to ensure their contribution to LED.

Additional to the above, the contribution of employment creation under the formed projects for the residence of the districts is very minimal. To enhance further employment, the government needs to support the established projects which could facilitate the creation for many jobs. This could encourage local entrepreneurship and LED. Furthermore, CBID should be promoted as a nationally recognized occupation with a clear basis in values, methods and outcomes. Therefore further awareness must be create for community through Woreda meetings and media to have better information regarding to the potential of CBID that it has a potential in creation of jobs.

Most challenges that face CBIDs projects are related to committee's responsibility and the problem of coordination of other government offices like ELPA, TELE etc. Training of project management must be given for the committees before directly involved to projects. A strategic approach and coordination of other government bodies are needed that can operate in each local area, with strengthened Woreda networks and appropriate national links.

Though most of the projects are basing interests of community, there are still some projects that must be given high emphasis as mentioned in the analysis. The Woreda administrators have to check in what must be done to improve local areas and to fulfill the basic needs of community. This is because in the poor and marginalized community there are some elites which the project are constructed according to their financial and decision powers. As it is indicated in the analysis, public toilets are mentioned as one of the focus needed. But this project for rich community may not necessary as those poor communities. Thus, when government sets rank and give fund, it should consider every communities role, participation, need, and current infrastructural status.

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APPENDIX

Annex 1
Questionnaire
Mekelle University
College of Business and Economics
Management Department

This questionnaire is part of a study being undertaken on Community based development for local economic development in infrastructure in Addis Ababa; Yeka Sub-city. The following questions are purely for an academic exercise.

Thus the researcher would like to invite stakeholders in community development based specifically in infrastructure, who are in a position to provide valuable information which will help the research in progress. Thus, the return of the survey form will constitute your consent to participate in the study and your inconspicuousness is guaranteed.

Thank you
Sincerely
Kumeshe Tessema

Enumerator's Name: _____
Date: _____
Survey Area: _____

Note: - For those close-ended questions you are kindly requested to encircle the number (choice) in each question that holds your opinion. And for the open-ended type of questions, you write your genuine opinion precisely in the space provided.

District: - _____

Part I. Background of Respondents

1. Sex: 1. Male 2. Female
2. Age: _____
3. Marital status:
 1. Married 3. Single
 2. Widowed 4. Divorced

4. Educational attainment

No	Educational level	Response
1	Illiterate	
2	1-8grade	
3	9-12 grade	
4	TVET graduate	
5	College diploma	
6	Degree	
7	Above Degree	

5. What is your current occupation?
 1. Student 4. House wife
 2. Daily Laborer 5. If others, specify _____
 3. Unemployed
6. In what kind of house do you live?
 1. Owned
 2. Rented from people
 3. Family house for free
 4. Rented Keble house
 5. Rented from housing authority
 6. Other specify _____
7. How do you rate yourself in relation to other families in your district?
 1. Rich
 2. Better off
 3. Average
 4. Poor
 5. The poorest
8. People say “people around here are trust worthy” do you agree?
 1. Yes 2. No
9. For how many years have you stayed in this district? _____

Part II. Level of Local Knowledge of the Community

10. Have you heard before about community based infrastructure development efforts around your district?
 1. Yes 2. No

11. If your answer for question 10 is yes, have you participated in any community development works before?
 1. Yes
 2. No
12. If yes, for question 11 in what kinds of development efforts have you participated before? (Multiple response is possible)
 1. Police stations construction
 2. Cobble stone works
 3. Water pipe
 4. Public toilet
 5. Green developmental activities
 6. If others, specify _____
13. If your answer for question 10 is no, what is the reason? (Multiple answers are allowed)
 1. No of years lived in the current location
 2. Insufficient income to support
 3. Insufficient coordination from local authorities
 4. Lack of information
 5. Lack of strong committee to support
 6. Lack of the allocation of matching fund from the district
 7. If others, specify _____
14. In what ways have you supported the community development efforts in infrastructure? (Multiple response is possible)
 1. Raised Money
 2. Knowledge
 3. As a work force
 4. Material
 5. If others, specify _____
15. What do you do if some community member of your district rejects to participate in your community development works? _____
16. Did the community based infrastructural developments were based on your needs?
 1. Yes
 2. No
17. How community development works has a difference compared to state works?
 1. Have better efficiency management
 2. Lower efficiency management
 3. Medium efficiency management
 4. If other specify, _____

Part III. Community Ownership and Projects Continuity

18. Who is responsible in harmonization of infrastructural developments in your district?
 1. Community itself
 2. Community leader
 3. Committee
 4. Community state
 5. If other specify, _____

19. Were you satisfied with the infrastructural development works in your district?
 1. Very satisfied
 2. Satisfied
 3. Neutral
 4. Not satisfied
 5. Never satisfied
20. Which types of infrastructure project are you currently in need of with your area?
 1. Police stations construction
 2. Cobble stone works
 3. Water pipe.
 4. Public toilet
 5. Green developmental activities
 6. If others, specify _____
21. After a project is constructed, who is responsible for the maintenance?
 1. The community itself
 2. The district administration
 3. No one will fix it
 4. If others, specify _____
22. How community's committees/leaders are elected?
 1. By vote
 2. By community association like 'Edir'
 3. By the district administration
 4. No one elects, they start by their own motivation
 5. If others, specify _____
23. Do you think the people or committee who are engaged in such community work see such activity as their own?
 1. Yes
 2. No
24. If your answer for question 23 is no, why?
 1. No harmonizing experience or ability
 2. No support for them to organize the projects
 3. They are just there only to decrease their all-day-leisure time
 4. If others, specify _____
25. If there is a dispute between community members regarding community infrastructure works, who is responsible in resolving the conflicts?
 1. Elders
 2. Committee
 3. District administration
 4. Community itself
 5. If others, specify _____
26. Are you a member of any social community associations?
 1. Yes
 2. No
27. If your answer for question 26 is yes, in what association are you a member in?
 1. Edir
 2. Community development association
 3. Mahiber
 4. Equb

5. If others, specify _____
28. If you are not a member or terminated your membership of a social community association, what is the reason?
 1. Lack of coordination of committees
 2. Lack of time
 3. New settler in the district
 4. Ownership of own premise
 5. Don't get its importance
 6. Lack of trust on the committees
 7. If others, specify _____
29. Do you have meetings on permanent basis in your district?
 1. Yes
 2. No
30. How much do you participate in meetings and other social activities?
 1. Always
 2. Rarely
 3. Sometimes
 4. If others, specify _____
31. Do you think the meetings have an impact in the promotion and harmonization of infrastructural development efforts?
 1. Yes
 2. No
32. Do you have a contact with other district?
 1. Always as needed
 2. Rarely
 3. Sometimes
 4. Never
 5. If others, specify _____
33. Have you received any start up supports from the district offices?
 1. Yes
 2. No
34. If no, why?
 1. Lack of clear programs/coordination from the local committees
 2. Lack of ability or willingness from the district offices
 3. Government regulations
 4. Clear financial feasible statements from committees
 5. If others, specify _____
35. Have you received any follow up supports from district administration after the projects were started?
 1. Yes
 2. No

Part IV. Infrastructure Needed for Local Economic Development

36. How much was the monthly income of the family before the project? (For business owners only) _____
37. How much is the monthly income of the family after the project? (For business owners only) _____

38. Compare to time before the project and now what do you think the relation value of house rent in relation to other locations in Addis Ababa?
1. Increased
 2. The same
 3. Decreased
39. In what way does the development of these infrastructures benefit the community?
1. Security
 2. Transport facilitation
 3. Better water access
 4. Better recreational centers
 5. Core beautification and sanitation
 6. If others, specify _____
40. Compare to the project time how do you compare the security of the district from crime?
1. Improved
 2. The same
 3. Get worst
41. Compare to project time how do you compare access of district to safe drinking water?
1. Improved
 2. The same
 3. Get worst
42. How do you compare level of economic activity in this area before and after the project?
1. Significantly improved
 2. Improved
 3. The same
 4. It gets worst
 5. It was destroyed
43. Do you have a family member who is employed in the project which is sponsored by community based development?
1. Yes
 2. No

Part V. Challenges of CBD Infrastructures towards their Contributions for LED

44. What are the internal challenges you face in community infrastructural development activities? (Rank 1-3)

No	Challenges	Response	No	Challenges	Response
1	Undedicated committee		5	Offerings of material	
2	Problem of stable administration		6	Improper utilization of resources	
3	Financial constraint		7	Auditing problem	
4	Consultancy and training		8	The prevalence of nature of dependency in the community and committee	

45. What are the external challenges you face in community infrastructural development activities? (Rank 1-3)

No	Challenges	Response
1	Un-coordination of other government offices like TELE, ELEPA and water lines	
2	Delaying of plans and implementation	
3	Level of trust among community	
4	The delaying of matching fund	
5	Lack of participation	
6	Relating to bidding	

46. If you have additional comment

Annex 2

Interview for Key Informants

1. Where the resource does generally is collected and where does it put after collected?
2. What measures are the government is taking for localities to compete for each other?
3. What are the main problems of community based infrastructural development?
4. How is the participation of community in meetings?
5. Is the project plan and implementation is basing on needs and interest of community or the government?
6. What measures is taking to create awareness in the society?
7. What seems the participation of female, youth in the developmental aspects?
8. What measures is taking to have all Tabia have a similar works?
9. In the plan there are many projects but it is few in the application what the reason is behind?
10. How does the government give a rank for Tibias?
11. How the committee does elected and how does they work?
12. And how they work with the woreda administrative?
13. Which types of infrastructures do the community want and why?

Annex 3

Endogenous Switch Ordered Probit Regression
(Adaptive quadrature -- 16 points)

Log likelihood = -374.58716

Number of obs = 345
Wald chi2(38) = 6969.52
Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
q36						
best	1.045736	.0633441	16.51	0.000	.9215837	1.169888
wealth2	-.7529747	2.351404	-0.32	0.749	-5.361642	3.855693
wealth3	-.7293625	.1574363	-4.63	0.000	-1.037932	-.420793
wealth4	-1.247295	.0755533	-16.51	0.000	-1.395377	-1.099213
wealth5	-.7580764	.0459195	-16.51	0.000	-.848077	-.6680759
q72	-.0003811	.0189463	-0.02	0.984	-.0375152	.036753
q8	-.3831006	.0911089	-4.20	0.000	-.5616708	-.2045303
rented	.214651	.0130022	16.51	0.000	.1891671	.2401348
business	-.0713477	.0043218	-16.51	0.000	-.0798182	-.0628771
switch						
qn1	-.3834768	.2022016	-1.90	0.058	-.7797846	.0128311
qn2	-.0345699	.0098337	-3.52	0.000	-.0538435	-.0152963
marital2	.514958	.4607415	1.12	0.264	-.3880788	1.417995
marital3	-.3171379	.1684978	-1.88	0.060	-.6473876	.0131117
marital4	-.5924732	.5572299	-1.06	0.288	-1.684624	.4996773
edu2	-.464097	.4885107	-0.95	0.342	-1.42156	.4933664
edu3	-.0354242	.4944409	-0.07	0.943	-1.004511	.9336621
edu4	-.4152014	.5154925	-0.81	0.421	-1.425548	.5951453
edu5	-.376239	.5140702	-0.73	0.464	-1.383798	.63132
edu6	-.592005	.5582413	-1.06	0.289	-1.686138	.5021278
emp2	-.0660919	.2664884	-0.25	0.804	-.5883996	.4562157
emp3	.397055	.3014645	1.32	0.188	-.1938044	.9879145
emp4	.4610274	.3715283	1.24	0.215	-.2671547	1.189209
emp5	.5672715	.2604897	2.18	0.029	.0567211	1.077822
house2	.1797109	.2498233	0.72	0.472	-.3099336	.6693555
house3	.084594	.2975973	0.28	0.776	-.4986859	.667874
house4	-.1049979	.3209943	-0.33	0.744	-.7341351	.5241394
house5	1.245057	.550438	2.26	0.024	.1662183	2.323896
wealth2	.5891876	.3541077	1.66	0.096	-.1048508	1.283226
wealth3	-.1515857	.2970257	-0.51	0.610	-.7337455	.430574
wealth4	.2680311	.3207495	0.84	0.403	-.3606263	.8966885
wealth5	-.3272072	.4166261	-0.79	0.432	-1.143779	.489365
q8	-.1441981	.173847	-0.83	0.407	-.484932	.1965357
q72	.0012982	.0145922	0.09	0.929	-.027302	.0298984
q82	-.1243234	.2704456	-0.46	0.646	-.6543871	.4057402
q9	.3539433	.1985904	1.78	0.075	-.0352868	.7431734
q24	-.3675489	.1846767	-1.99	0.047	-.7295086	-.0055891
q31	.0803086	.2037232	0.39	0.693	-.3189814	.4795987
q33	.2189314	.1820851	1.20	0.229	-.1379488	.5758115
_cons	1.123282	.8728999	1.29	0.198	-.5875705	2.834134
aux_q36						
_cut1	-.3120808	.0393988	-7.92	0.000	-.3893011	-.2348606
_cut2	.8986457	.0544343	16.51	0.000	.7919565	1.005335
rho	-.7071063	6.19e-08	-1.1e+07	0.000	-.7071064	-.7071061

Likelihood ratio test for rho=0: chi2(1)= 0.00 Prob>=chi2 = 1.000

Endogenous Switch Ordered Probit Regression
(Adaptive quadrature -- 16 points)

Log likelihood = -495.39356

Number of obs = 343
wald chi2(38) = 110.69
Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
q38						
best	-.9936512	.1469297	-6.76	0.000	-1.281628	-.7056744
wealth2	1.469843	1.064977	1.38	0.168	-.6174739	3.55716
wealth3	-.1894094	.604452	-0.31	0.754	-1.374114	.9952948
wealth4	.2475979	.6254006	0.40	0.692	-.9781647	1.47336
wealth5	-.0066215	.9043647	-0.01	0.994	-1.779144	1.765901
q72	-.0048487	.0347762	-0.14	0.889	-.0730089	.0633115
q8	.0440991	.4140495	0.11	0.915	-.767423	.8556212
rented	.2673814	.3889401	0.69	0.492	-.4949272	1.02969
business	-.0105465	.1795326	-0.06	0.953	-.3624239	.341331
switch						
qn1	-.2225881	.1821465	-1.22	0.222	-.5795885	.1344124
qn2	-.0317019	.0092722	-3.42	0.001	-.049875	-.0135288
marital2	.550153	.4092968	1.34	0.179	-.2520539	1.35236
marital3	-.0686817	.1575602	-0.44	0.663	-.377494	.2401306
marital4	-.0486832	.5355936	-0.09	0.928	-1.098427	1.001061
edu2	.4327882	.4894949	0.88	0.377	-.5266043	1.392181
edu3	.653212	.5063671	1.29	0.197	-.3392493	1.645673
edu4	-.0343239	.5172827	-0.07	0.947	-1.048179	.9795315
edu5	.3907083	.5157379	0.76	0.449	-.6201195	1.401536
edu6	-.0312356	.5750993	-0.05	0.957	-1.15841	1.095938
emp2	.1225441	.2505773	0.49	0.625	-.3685785	.6136667
emp3	.1536719	.2807532	0.55	0.584	-.3965943	.7039381
emp4	-.0197682	.3471902	-0.06	0.955	-.7002485	.6607122
emp5	.4738173	.2486758	1.91	0.057	-.0135783	.9612129
house2	-.3678982	.242249	-1.52	0.129	-.8426975	.106901
house3	-.5515583	.2823818	-1.95	0.051	-1.105016	.0018998
house4	-.5644928	.3044062	-1.85	0.064	-1.161118	.0321323
house5	.5088527	.5919385	0.86	0.390	-.6513255	1.669031
wealth2	.9672168	.3305898	2.93	0.003	.3192727	1.615161
wealth3	.351301	.2885198	1.22	0.223	-.2141874	.9167894
wealth4	.6032555	.3000398	2.01	0.044	.0151883	1.191323
wealth5	.0480588	.3808592	0.13	0.900	-.6984115	.7945292
q8	-.0056274	.1661658	-0.03	0.973	-.3313064	.3200516
q72	.0106372	.0141827	0.75	0.453	-.0171605	.0384348
q82	.220461	.249731	0.88	0.377	-.2690028	.7099247
q9	.2564372	.1923505	1.33	0.182	-.1205629	.6334373
q24	-.2755611	.1837251	-1.50	0.134	-.6356557	.0845336
q31	-.2152662	.1946942	-1.11	0.269	-.5968599	.1663274
q33	.4358666	.1725903	2.53	0.012	.0975958	.7741375
_cons	-.3827246	.8256411	-0.46	0.643	-2.000951	1.235502
aux_q38						
_cut1	.0810404	.5587649	0.15	0.885	-1.014119	1.1762
_cut2	.7074967	.5531405	1.28	0.201	-.3766389	1.791632
rho	.7070676	.0000568	12439.19	0.000	-.7068848	.7071001

Likelihood ratio test for rho=0: chi2(1)= 0.00 Prob>=chi2 = 1.000

Endogenous Switch Ordered Probit Regression
(Adaptive quadrature -- 16 points)

Log likelihood = -567.63389

Number of obs = 343
Wald chi2(41) = 93948.25
Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
q39						
best	-1.085711	.0056803	-191.14	0.000	-1.096844	-1.074578
qn1	-.36931	.0078904	-46.81	0.000	-.3847749	-.3538452
qn2	.0442888	.0002957	149.77	0.000	.0437092	.0448684
wealth2	.5580963	.0029199	191.14	0.000	.5523734	.5638192
wealth3	-.4607704	.087791	-5.25	0.000	-.6328375	-.2887033
wealth4	.1778691	.087941	2.02	0.043	.005508	.3502302
wealth5	.4516187	.0881388	5.12	0.000	.2788698	.6243676
rented	.0201469	.0050816	3.96	0.000	.0101871	.0301067
emp2	.1865804	.0856469	2.18	0.029	.0187156	.3544452
emp3	-.478632	.0855813	-5.59	0.000	-.6463682	-.3108957
emp4	-.0607743	.0861478	-0.71	0.481	-.229621	.1080724
emp5	-.3266541	.0854565	-3.82	0.000	-.4941459	-.1591624
switch						
qn1	-.4257944	.1887387	-2.26	0.024	-.7957154	-.0558734
qn2	-.0037374	.0091156	-0.41	0.682	-.0216038	.0141289
marital2	.3848725	.4004049	0.96	0.336	-.3999067	1.169652
marital3	.1008716	.1604341	0.63	0.530	-.2135736	.4153167
marital4	.3000302	.545585	0.55	0.582	-.7692967	1.369357
edu2	.0934609	.5101209	0.18	0.855	-.9063577	1.093279
edu3	.3625878	.5228951	0.69	0.488	-.6622677	1.387443
edu4	-.3952324	.5471047	-0.72	0.470	-1.467538	.6770731
edu5	.0534574	.537163	0.10	0.921	-.9993627	1.106278
edu6	-.3306405	.5917477	-0.56	0.576	-1.490445	.8291636
emp2	.2089931	.255338	0.82	0.413	-.2914602	.7094464
emp3	.1964093	.2828584	0.69	0.487	-.3579829	.7508016
emp4	.3832784	.3489834	1.10	0.272	-.3007165	1.067273
emp5	.3641598	.2455805	1.48	0.138	-.1171691	.8454886
house2	-.069685	.2336722	-0.30	0.766	-.5276741	.3883041
house3	-.0028852	.2678777	-0.01	0.991	-.5279159	.5221455
house4	-.1547966	.3016219	-0.51	0.608	-.7459647	.4363715
house5	.8671309	.6502069	1.33	0.182	-.4072511	2.141513
wealth2	.7399326	.3432392	2.16	0.031	.0671962	1.412669
wealth3	.1003755	.296566	0.34	0.735	-.4808832	.6816342
wealth4	.6798478	.3171498	2.14	0.032	.0582457	1.30145
wealth5	.5070492	.4088267	1.24	0.215	-.2942364	1.308335
q8	-.0879043	.1689371	-0.52	0.603	-.419015	.2432063
q72	-.0058417	.0142461	-0.41	0.682	-.0337636	.0220803
q82	-.1578969	.2588062	-0.61	0.542	-.6651478	.3493539
q9	.2593118	.1966313	1.32	0.187	-.1260785	.6447021
q24	-.4913007	.186693	-2.63	0.008	-.8572122	-.1253892
q31	-.0925575	.1978984	-0.47	0.640	-.4804312	.2953162
q33	.2429156	.1709233	1.42	0.155	-.092088	.5779191
_cons	-.0645731	.8295656	-0.08	0.938	-1.690492	1.561345
aux_q39						
_cut1	.1473094	.1092112	1.35	0.177	-.0667407	.3613595
_cut2	.8928046	.1091561	8.18	0.000	.6788625	1.106747
rho	.7071061	7.14e-09	9.9e+07	0.000	.7071061	.7071061

Likelihood ratio test for rho=0: chi2(1)= 0.00 Prob>=chi2 = 1.000

Endogenous Switch Ordered Probit Regression
(Adaptive quadrature -- 16 points)

Log likelihood = -566.58903

Number of obs = 343
wald chi2(41) = 9409.41
Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
q40new						
best	1.128411	.0324474	34.78	0.000	1.064815	1.192007
qn2	.0083058	.0022132	3.75	0.000	.0039679	.0126436
wealth2	-1.267252	.2530086	-5.01	0.000	-1.76314	-.7713646
wealth3	-1.642812	.0683868	-24.02	0.000	-1.776847	-1.508776
wealth4	-.943691	.1020041	-9.25	0.000	-1.143615	-.7437666
wealth5	-1.361533	.1471689	-9.25	0.000	-1.649978	-1.073087
edu2	-1.188732	.1284908	-9.25	0.000	-1.44057	-.9368951
edu3	-1.334194	.3198117	-4.17	0.000	-1.961013	-.7073741
edu4	-.6066991	.0655785	-9.25	0.000	-.7352305	-.4781677
edu5	-1.462818	.35599	-4.11	0.000	-2.160546	-.7650904
edu6	-.9650557	.3204876	-3.01	0.003	-1.5932	-.3369116
business	-.6307514	.0374292	-16.85	0.000	-.7041112	-.5573916
switch						
qn1	-.1498991	.1856743	-0.81	0.419	-.5138141	.214016
qn2	-.0194218	.0091929	-2.11	0.035	-.0374395	-.0014041
marital2	.5164011	.4181933	1.23	0.217	-.3032426	1.336045
marital3	.0685932	.1594339	0.43	0.667	-.2438915	.3810779
marital4	-.6851844	.4961879	-1.38	0.167	-1.657695	.2873261
edu2	-.3892776	.4507035	-0.86	0.388	-1.27264	.494085
edu3	.066659	.4554827	0.15	0.884	-.8260708	.9593887
edu4	-.7179382	.4749598	-1.51	0.131	-1.648842	.2129658
edu5	-.218352	.4770413	-0.46	0.647	-1.153336	.7166318
edu6	-.2417801	.5129521	-0.47	0.637	-1.247148	.7635876
emp2	-.208816	.2560579	-0.82	0.415	-.7106804	.2930483
emp3	.1556394	.2871043	0.54	0.588	-.4070747	.7183535
emp4	.4322282	.3425435	1.26	0.207	-.2391447	1.103601
emp5	.4407602	.2480742	1.78	0.076	-.0454562	.9269766
house2	-.0966459	.2424754	-0.40	0.690	-.571889	.3785972
house3	-.6183506	.2858242	-2.16	0.031	-1.178556	-.0581455
house4	-.4517533	.3023126	-1.49	0.135	-1.044275	.1407685
house5	.5291965	.5397419	0.98	0.327	-.5286781	1.587071
wealth2	1.211924	.3574897	3.39	0.001	.5112569	1.912591
wealth3	.5263729	.3071749	1.71	0.087	-.0756789	1.128425
wealth4	.6842009	.3273199	2.09	0.037	.0426657	1.325736
wealth5	.5161344	.4138809	1.25	0.212	-.2950572	1.327326
q8	.0824072	.1645007	0.50	0.616	-.2400083	.4048226
q72	-.0155998	.013913	-1.12	0.262	-.0428688	.0116692
q82	.1183983	.2722929	0.43	0.664	-.415286	.6520827
q9	.5308394	.1869954	2.84	0.005	.1643351	.8973438
q24	-.4761255	.1733241	-2.75	0.006	-.8158344	-.1364165
q31	.0659931	.1940963	0.34	0.734	-.3144287	.4464149
q33	.2414001	.1699042	1.42	0.155	-.091606	.5744062
_cons	-.511492	.8499315	-0.60	0.547	-2.177327	1.154343
aux_q40new						
_cut1	-2.932622	.3169887	-9.25	0.000	-3.553908	-2.311335
_cut2	-1.603695	.3270831	-4.90	0.000	-2.244766	-.9626239
_cut3	-.7507788	.3354138	-2.24	0.025	-1.408178	-.0933799
rho	-.707106	1.77e-07	-4.0e+06	0.000	-.7071062	-.7071055

Likelihood ratio test for rho=0: chi2(1)= 0.00 Prob>=chi2 = 1.000

Endogenous Switch Ordered Probit Regression
(Adaptive quadrature -- 16 points)

Log likelihood = -386.62166

Number of obs = 343
Wald chi2(45) = 2506.57
Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
q41						
best	1.115141	.036499	30.55	0.000	1.043605	1.186678
qn1	.2125634	.0261086	8.14	0.000	.1613914	.2637353
qn2	-.0136171	.0009966	-13.66	0.000	-.0155704	-.0116638
edu2	-1.057253	.0543849	-19.44	0.000	-1.163846	-.9506606
edu3	-1.131522	.0439704	-25.73	0.000	-1.217703	-1.045342
edu4	-1.26343	.068722	-18.38	0.000	-1.398122	-1.128737
edu5	-1.150148	.0566823	-20.29	0.000	-1.261244	-1.039053
edu6	.4323715	.119685	3.61	0.000	.1977932	.6669497
wealth2	-.1226303	.0634507	-1.93	0.053	-.2469914	.0017307
wealth3	-.2765212	.069459	-3.98	0.000	-.4126584	-.140384
wealth4	-.0659775	.0657599	-1.00	0.316	-.1948645	.0629096
wealth5	-.8657945	.0734378	-11.79	0.000	-1.00973	-.7218591
emp2	-.1405935	.0435898	-3.23	0.001	-.226028	-.055159
emp3	.1261804	.0443076	2.85	0.004	.0393391	.2130216
emp4	1.247936	.0408454	30.55	0.000	1.16788	1.327991
emp5	.1792966	.0344476	5.20	0.000	.1117805	.2468127
switch						
qn1	-.4097386	.1998879	-2.05	0.040	-.8015116	-.0179656
qn2	-.0230424	.0097046	-2.37	0.018	-.042063	-.0040218
marital2	.4258974	.437631	0.97	0.330	-.4318436	1.283638
marital3	.0448951	.1682025	0.27	0.790	-.2847758	.3745661
marital4	-.0443922	.5367718	-0.08	0.934	-1.096446	1.007661
edu2	-.2566882	.5483419	-0.47	0.640	-1.331419	.8180421
edu3	.1212217	.5475672	0.22	0.825	-.9519903	1.194434
edu4	-.4901294	.5762341	-0.85	0.395	-1.619528	.6392688
edu5	-.2819225	.5687032	-0.50	0.620	-1.39656	.8327153
edu6	-.5080803	.607907	-0.84	0.403	-1.699556	.6833956
emp2	-.1576561	.2653665	-0.59	0.552	-.6777649	.3624527
emp3	.276905	.2927727	0.95	0.344	-.296919	.850729
emp4	.2530958	.3581645	0.71	0.480	-.4488937	.9550854
emp5	.4286033	.2544799	1.68	0.092	-.0701682	.9273748
house2	-.305964	.2564693	-1.19	0.233	-.8086347	.1967067
house3	-.5588826	.2998872	-1.86	0.062	-1.146651	.0288855
house4	-.3981741	.3310015	-1.20	0.229	-1.046925	.250577
house5	.5390423	.5813047	0.93	0.354	-.6002939	1.678379
wealth2	.5118318	.3618285	1.41	0.157	-.197339	1.221003
wealth3	.1780336	.3077208	0.58	0.563	-.4250881	.7811553
wealth4	.4216375	.3297373	1.28	0.201	-.2246358	1.067911
wealth5	.0234497	.4177824	0.06	0.955	-.7953887	.8422882
q8	-.1089659	.1761949	-0.62	0.536	-.4543015	.2363698
q72	.0024353	.0151221	0.16	0.872	-.0272035	.032074
q82	-.2299284	.2699669	-0.85	0.394	-.7590538	.299197
q9	.6342615	.2063603	3.07	0.002	.2298028	1.03872
q24	-.4097605	.1888202	-2.17	0.030	-.7798413	-.0396796
q31	-.0775798	.208343	-0.37	0.710	-.4859245	.3307648
q33	.4986481	.1798034	2.77	0.006	.14624	.8510562
_cons	.4149556	.8757311	0.47	0.636	-1.301446	2.131357
aux_q41						
_cut1	-1.147158	.0375469	-30.55	0.000	-1.220748	-1.073567
rho	-.7068354	.0000178	-4.0e+04	0.000	-.7068671	-.7067969

Likelihood ratio test for rho=0: chi2(1)= 0.00 Prob>=chi2 = 1.000